

Set Name Query

side by side

Hit Count Set Name

result set

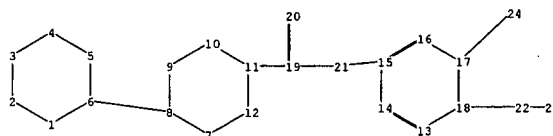
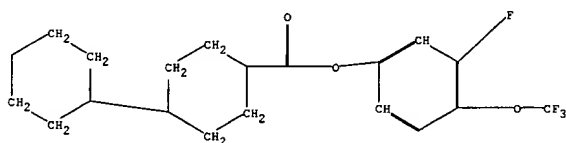
DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=ADJ

<u>L23</u>	L20 and ips	1	<u>L23</u>
<u>L22</u>	L20 and (3-12)	0	<u>L22</u>
<u>L21</u>	L20 and 3-12	0	<u>L21</u>
<u>L20</u>	us-6329027-\$.did.	2	<u>L20</u>
<u>L19</u>	in-plane-switching same realign\$	9	<u>L19</u>
<u>L18</u>	ips with realign\$	4	<u>L18</u>
<u>L17</u>	ips with realin\$	0	<u>L17</u>
<u>L16</u>	ips with realignment	2	<u>L16</u>
<u>L15</u>	L12 and parallel	0	<u>L15</u>
<u>L14</u>	wo-9632365-\$.did.	2	<u>L14</u>
<u>L13</u>	wo-96032365-\$.did.	0	<u>L13</u>
<u>L12</u>	L11 and positive	4	<u>L12</u>
<u>L11</u>	L10 and (ips or in-plane-switching)	4	<u>L11</u>
<u>L10</u>	us-6210761-\$.did. or us-6329027-\$.did. or us-6210603-\$.did. or us-6197217-\$.did.	8	<u>L10</u>
<u>L9</u>	L8 and positive dielectric	8	<u>L9</u>
<u>L8</u>	L7 and liquid crystal\$	25	<u>L8</u>
<u>L7</u>	L6 and (ips or in-plane-switching)	119	<u>L7</u>
<u>L6</u>	kondo-\$.in.	54323	<u>L6</u>
<u>L5</u>	L3 and realign\$	0	<u>L5</u>
<u>L4</u>	L3 and parallel	0	<u>L4</u>
<u>L3</u>	us-5820784-\$.did. or us-6051288-\$.did. or us-5733477-\$.did. or us-5755994-\$.did.	7	<u>L3</u>
<u>L2</u>	L1	0	<u>L2</u>

DB=USPT,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=ADJ

<u>L1</u>	cczg-?-ot	0	<u>L1</u>
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END OF SEARCH HISTORY



chain nodes :

19 20 21 22 23 24

ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

chain bonds :

6-8 11-19 15-21 17-24 18-22 19-20 19-21 22-23

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15
15-16 16-17 17-18

exact/norm bonds :

1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 15-21 18-22 19-20
19-21

exact bonds :

6-8 11-19 17-24 22-23

normalized bonds :

13-14 13-18 14-15 15-16 16-17 17-18

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom
12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:CLASS 20:CLASS
21:CLASS 22:CLASS 23:CLASS 24:CLASS

4/7/2000

5755994

5820784

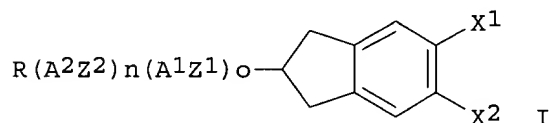
5733477

6051288

L3 ANSWER 1 OF 10 CAPLUS COPYRIGHT 2002 ACS
 AN 2002:449802 CAPLUS
 DN 137:13354
 TI Liquid crystalline medium with improved physical properties suitable for liquid crystal display
 IN Heckmeier, Michael; Engel, Martin; Schuler, Brigitte; Bremer, Matthias; Pauluth, Detlef
 PA Merck Patent G.m.b.H., Germany
 SO PCT Int. Appl., 77 pp.
 CODEN: PIXXD2
 DT Patent
 LA German
 IC ICM C09K019-32
 ICS C09K019-42; C09K019-44
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 75

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002046330	A1	20020613	WO 2001-EP10699	20010917
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	AU 2002013922	A5	20020618	AU 2002-13922	20010917
	DE 10155071	A1	20020808	DE 2001-10155071	20011109
PRAI	DE 2000-10060472	A	20001206		
	WO 2001-EP10699	W	20010917		
OS	MARPAT 137:13354				
GI					



AB The invention relates to a liq. cryst. medium, based on a mixt. of polar compds. with a pos. dielec. anisotropy. Said medium is characterized in that it contains one or more compds. of formula I (R = F, Cl, Br, I, CN, SF5, C1-12-alkyl; A1, A2 = 1,4-phenylene, trans-1,4-cyclohexylene, 1,4-cyclohexenylene, 1,4-bicyclo-(2,2,2)-octylene, piperidine-1,4-diyl, naphthalene-2,6-diyl, decahydronaphthalene-2,6-diyl, 1,2,3,4-tetrahydronaphthalene-2,6-diyl; L = F, Cl, Br, I, CN, NCS, SF5, C1-3-alkyl, alkoxy, alkylcarbonyl, alkylcarbonyloxy, alkoxycarbonyl, alkenyl, oxaalkenyl; Z1, Z2 = -CH2O-, -OCH2-, -CF2O-, -CF2-, -COO-, -OCO-, -CF2CF2-, -CH2CH2-, -(CH2)4-, -(CH2)3O-, -O(CH2)3-, -CF2CH2-, -CH:CH-, -CH:CF-, -CF:CF-, -C.tplbond.C-, single bond; X1, X2 = F, Cl, Br, I, CN, NCS, SF5, C1-5-alkyl, alkoxy, alkylcarbonyl, alkylcarbonyloxy, alkoxycarbonyl, alkenyl, oxaalkenyl; n, o = 0-2).

ST liq crystal mixt display pos dielec anisotropy polar compd

IT Liquid crystal displays
 (nematic liq. crystal mixt. with improved phys. properties suitable for liq. crystal display)

IT Liquid crystals

(nematic; nematic liq. crystal mixt. with improved phys. properties suitable for liq. crystal display)

IT 61203-94-9 76802-59-0 76802-60-3 81711-13-9 84540-37-4
84816-56-8 86504-57-6 86504-59-8 92263-41-7 102714-93-2
106349-49-9 116020-44-1 121219-92-9 129738-34-7 131819-23-3
132123-39-8 132123-45-6 133914-49-5 133937-72-1 135734-55-3
135734-56-4 135734-59-7 135734-60-0 137489-25-9 137528-82-6
137528-84-8 137644-54-3 139215-80-8 139395-96-3 159077-74-4
160239-89-4 161712-59-0 163424-92-8 163424-93-9 163424-94-0
173837-35-9 173837-36-0 174805-87-9 175859-25-3 181943-55-5
188289-44-3 205582-37-2 205806-87-7 **279246-59-2**
279246-60-5 279246-65-0 288579-85-1 288579-86-2
326894-55-7 431987-44-9 431987-45-0 431987-46-1 431987-47-2

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(nematic liq. crystal mixt. with improved phys. properties suitable for liq. crystal display)

IT 85600-56-2 132123-44-5 344940-57-4

RL: TEM (Technical or engineered material use); USES (Uses)

(nematic liq. crystal mixt. with improved phys. properties suitable for liq. crystal display)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Asahi Glass Co Ltd; JP 62181247 A 1987 CAPLUS
- (2) Asahi Glass Co Ltd; JP 62195355 A 1987 CAPLUS
- (3) Asahi Glass Co Ltd; JP 06263663 A 1994 CAPLUS
- (4) Merck Patent Gmbh; DE 4303634 A 1994 CAPLUS
- (5) Merck Patent Gmbh; DE 19520246 A 1995 CAPLUS
- (6) Merck Patent Gmbh; DE 4409526 A 1995 CAPLUS

IT **279246-59-2** **279246-60-5**

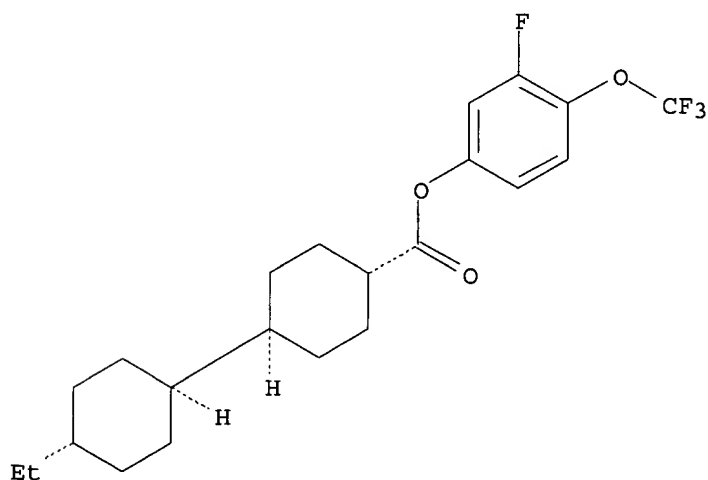
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(nematic liq. crystal mixt. with improved phys. properties suitable for liq. crystal display)

RN 279246-59-2 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-ethyl-, 3-fluoro-4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

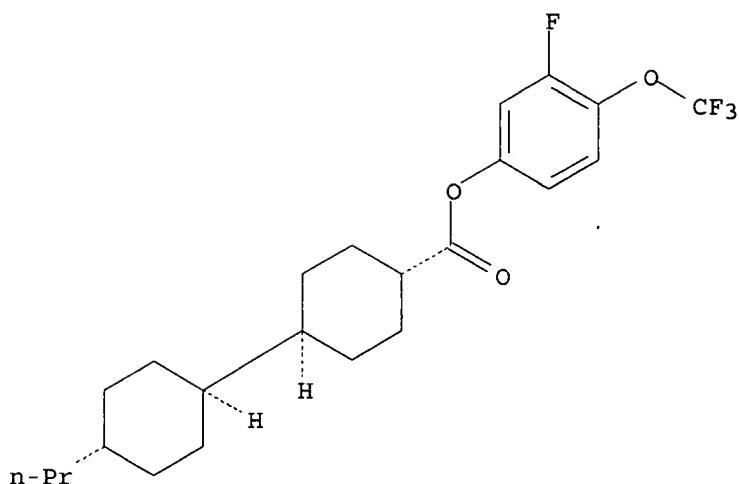
Relative stereochemistry.



RN 279246-60-5 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-propyl-, 3-fluoro-4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

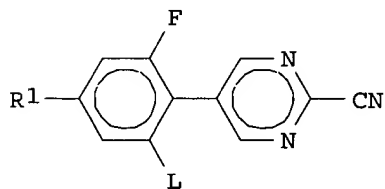
Relative stereochemistry.



L3 ANSWER 2 OF 10 CAPLUS COPYRIGHT 2002 ACS
 AN 2001:747073 CAPLUS
 DN 135:296286
 TI IPS (In-Plane-Switching) type electrooptical liq. crystal display with reorientation layer
 IN Heckmeier, Michael; Bremer, Matthias; Goetz, Achim; Schuler, Brigitte
 PA Merck Patent GmbH, Germany
 SO Ger. Offen., 36 pp.
 CODEN: GWXXBX
 DT Patent
 LA German
 IC ICM C09K019-34
 ICS C09K019-42; G02F001-137; G09F009-35
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 75

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 10111142	A1	20011011	DE 2001-10111142	20010308
	JP 2002012869	A2	20020115	JP 2001-108671	20010406
	US 2002031619	A1	20020314	US 2001-827342	20010406
PRAI	DE 2000-10017385	A1	20000407		
OS	MARPAT 135:296286				
GI					



I

AB The invention relates to a liq. crystal display which has a reorientation layer to reorient liq. crystal mixts. having pos. dielec. anisotropy, wherein the liq. crystal mixt. includes at least one mesogen compd. represented by a general formula I (R1 = C1-7-alkyl, alkoxy, C2-7-alkenyl, alkenyloxy, alkoxyalkyl; L = H, F). The liq. crystal mixt. suitable for the IPS (in-plane-switching) liq. crystal display shows relatively high

clear point, and low rotational viscosity.

ST liq crystal display IPS nematic liq crystal mixt

IT Liquid crystal displays
(IPS (In-Plane-Switching) type electrooptical liq. crystal display with reorientation layer)

IT Liquid crystals
(nematic; IPS (In-Plane-Switching) type electrooptical liq. crystal display with reorientation layer)

IT 142400-92-8, CCG-V-F
RL: TEM (Technical or engineered material use); USES (Uses)
(CCG-V-F; in nematic liq. crystal mixt. suitable for IPS (In-Plane-Switching) type electrooptical liq. crystal display with reorientation layer)

IT 221526-72-3, PPTUI 3-2
RL: TEM (Technical or engineered material use); USES (Uses)
(PPTUI 3-2; in nematic liq. crystal mixt. suitable for IPS (In-Plane-Switching) type electrooptical liq. crystal display with reorientation layer)

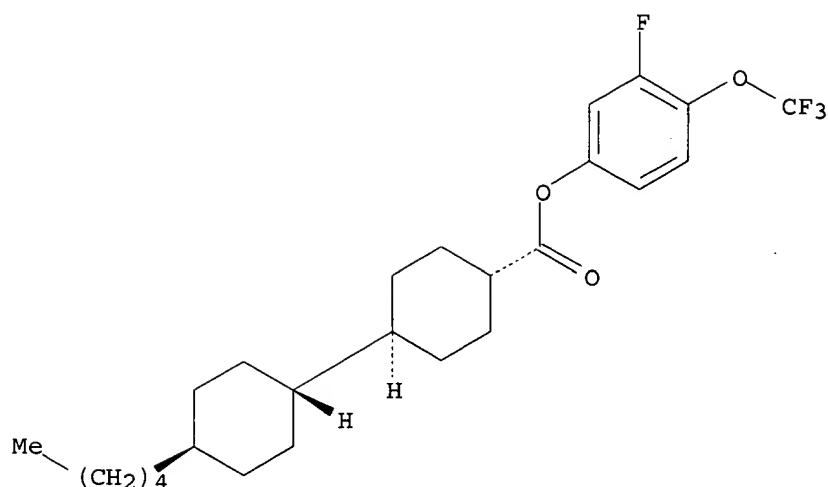
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61204-01-1 61204-03-3 72928-54-2 73255-62-6 74240-64-5
74240-65-6 74240-66-7 76802-59-0 76802-61-4 79832-84-1
80955-71-1 81711-13-9 81929-40-0 81936-32-5 83242-83-5
84540-37-4 85312-59-0 85600-56-2 86776-51-4 86776-52-5
86776-54-7 86786-89-2 89129-90-8 90937-40-9 92118-83-7
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115785-13-2 115978-59-1 116020-40-7 116020-44-1 118144-66-4
121219-85-0 129738-34-7 131790-57-3 131819-23-3 131997-93-8
131997-95-0 131997-96-1 132123-45-6 133058-92-1 133058-94-3
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134412-18-3 134462-11-6 135734-59-7 135734-60-0 139195-59-8
139215-80-8 142223-46-9 159119-17-2 167306-96-9 174806-93-0
174806-94-1 181943-55-5 181943-61-3 183848-98-8 **184161-88-4**
205582-37-2 279246-65-0 288579-85-1 288579-86-2 357952-07-9
364634-73-1 364634-75-3 364634-78-6 364634-79-7 364634-80-0
364634-81-1
RL: TEM (Technical or engineered material use); USES (Uses)
(in nematic liq. crystal mixt. suitable for IPS (In-Plane-Switching) type electrooptical liq. crystal display with reorientation layer)

IT **184161-88-4**
RL: TEM (Technical or engineered material use); USES (Uses)
(in nematic liq. crystal mixt. suitable for IPS (In-Plane-Switching) type electrooptical liq. crystal display with reorientation layer)

RN 184161-88-4 CAPLUS

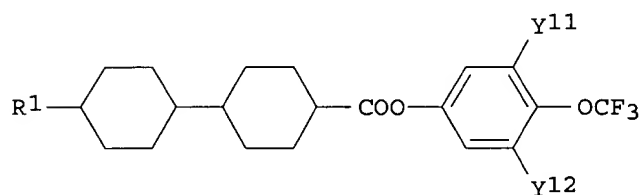
CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-pentyl-, 3-fluoro-4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L3 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2002 ACS
 AN 2001:747072 CAPLUS
 DN 135:296285
 TI IPS (In-Plane-Switching) type electrooptical liquid crystal display with reorientation layer
 IN Heckmeier, Michael; Reuter, Marcus; Bremer, Matthias; Poetsch, Eike
 PA Merck Patent GmbH, Germany
 SO Ger. Offen., 26 pp.
 CODEN: GWXXBX
 DT Patent
 LA German
 IC ICM C09K019-06
 ICS G02F001-137; G09F009-35
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 75
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 10111139	A1	20011011	DE 2001-10111139	20010308
	US 2002043645	A1	20020418	US 2001-819799	20010329
	JP 2002012866	A2	20020115	JP 2001-108549	20010406
PRAI	DE 2000-10017384	A1	20000407		
OS	MARPAT 135:296285				
GI					

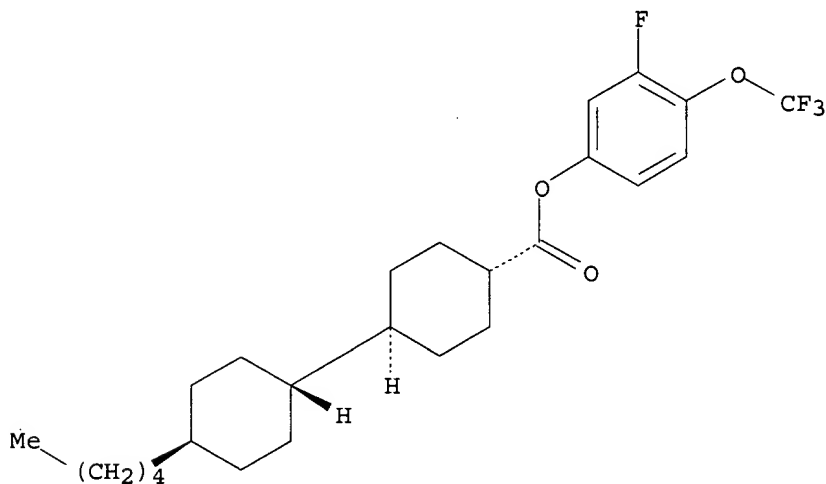


I

AB The invention relates to a liq. crystal display which has a reorientation layer to reorient liq. crystal mixts. having pos. dielec. anisotropy, wherein the liq. crystal mixt. includes at least one compd. represented by a general formula I (R1 = C1-7-alkyl, alkoxy, C2-7-alkenyl, alkenyloxy, alkoxyalkyl; Y11, Y12 = H, F). The liq. crystal mixt. suitable for the IPS (in-plane-switching) liq. crystal display shows relatively high clear point, and low rotational viscosity.

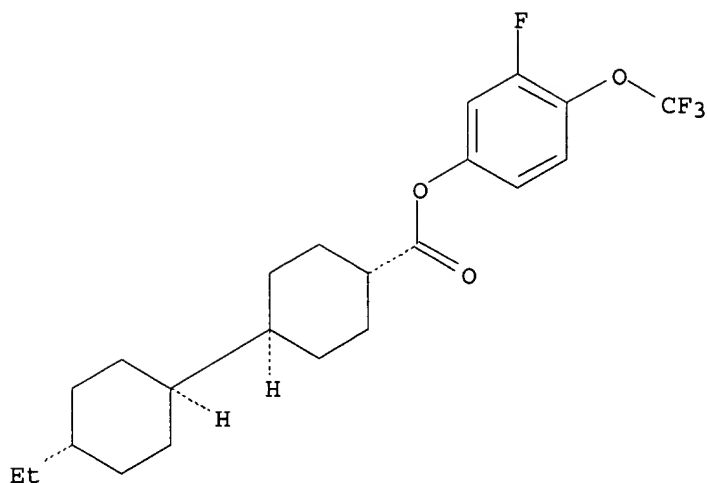
ST liq crystal display IPS nematic liq crystal mixt
 IT Liquid crystal displays
 (IPS (In-Plane-Switching) type electrooptical liq. crystal display with reorientation layer)
 IT Liquid crystals
 (nematic; IPS (In-Plane-Switching) type electrooptical liq. crystal display with reorientation layer)
 IT 74240-65-6 86776-50-3 96624-52-1 97398-80-6 102714-95-4
 129738-34-7 131819-23-3 132123-39-8 132123-45-6 135734-59-7
 135734-60-0 137644-54-3 139215-80-8 140911-33-7 159119-17-2
 167306-96-9 173837-35-9 173837-36-0 174805-87-9 175859-25-3
 178689-87-7 181943-55-5 181943-61-3 **184161-88-4**
 202116-87-8 **279246-59-2** **279246-60-5** 279246-65-0
364359-29-5
 RL: TEM (Technical or engineered material use); USES (Uses)
 (in nematic liq. crystal mixt. suitable for IPS (In-Plane-Switching) type electrooptical liq. crystal display with reorientation layer)
 IT **184161-88-4** **279246-59-2** **279246-60-5**
364359-29-5
 RL: TEM (Technical or engineered material use); USES (Uses)
 (in nematic liq. crystal mixt. suitable for IPS (In-Plane-Switching) type electrooptical liq. crystal display with reorientation layer)
 RN 184161-88-4 CAPLUS
 CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-pentyl-, 3-fluoro-4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 279246-59-2 CAPLUS
 CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-ethyl-, 3-fluoro-4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

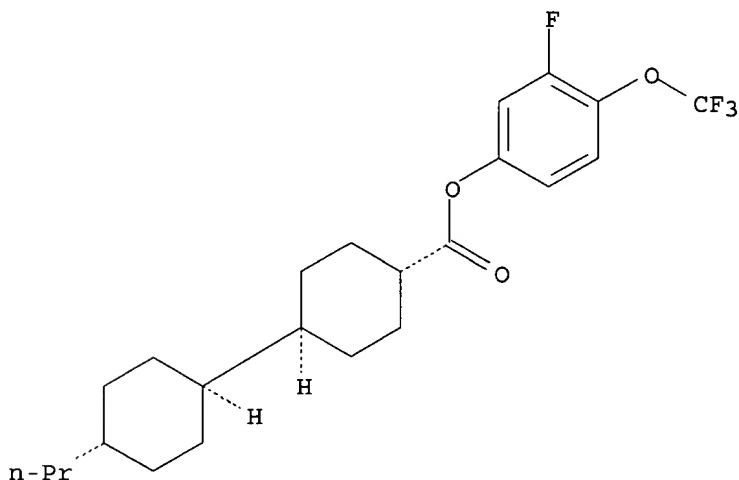
Relative stereochemistry.



RN 279246-60-5 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-propyl-, 3-fluoro-4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 364359-29-5 CAPLUS

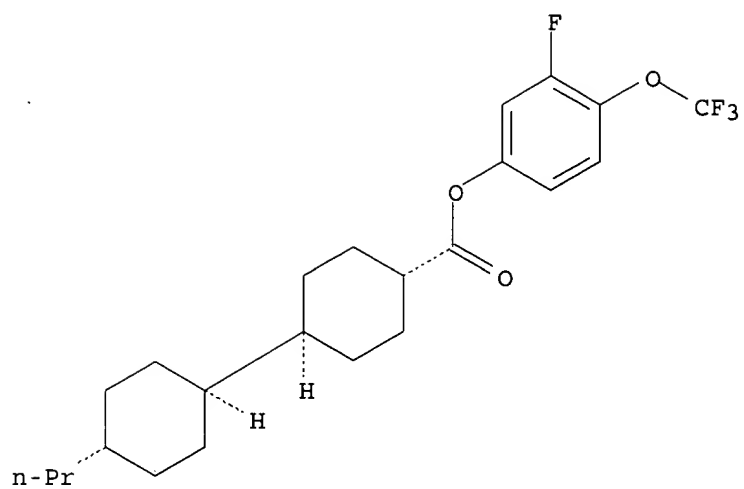
CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-ethyl-, 3-fluoro-4-(trifluoromethoxy)phenyl ester, (trans,trans)-, mixt. with 5-[(trans,trans)-4'-ethyl[1,1'-bicyclohexyl]-4-yl]-1,2,3-trifluorobenzene, 4-(trans-4-ethylcyclohexyl)-2,3',4',5'-tetrafluoro-1,1'-biphenyl, 1-fluoro-4-(trans-4-heptylcyclohexyl)benzene, (trans,trans)-3-fluoro-4-(trifluoromethoxy)phenyl 4'-propyl[1,1'-bicyclohexyl]-4-carboxylate, 1-[(trans,trans)-4'-propyl[1,1'-bicyclohexyl]-4-yl]-4-(trifluoromethoxy)benzene, 3,4,5-trifluoro-4'-(trans-4-pentylcyclohexyl)-1,1'-biphenyl, 1,2,3-trifluoro-5-[(trans,trans)-4'-propyl[1,1'-bicyclohexyl]-4-yl]benzene and 3,4,5-trifluoro-4'-(trans-4-propylcyclohexyl)-1,1'-biphenyl (9CI) (CA INDEX NAME)

CM 1

CRN 279246-60-5

CMF C23 H30 F4 O3

Relative stereochemistry.

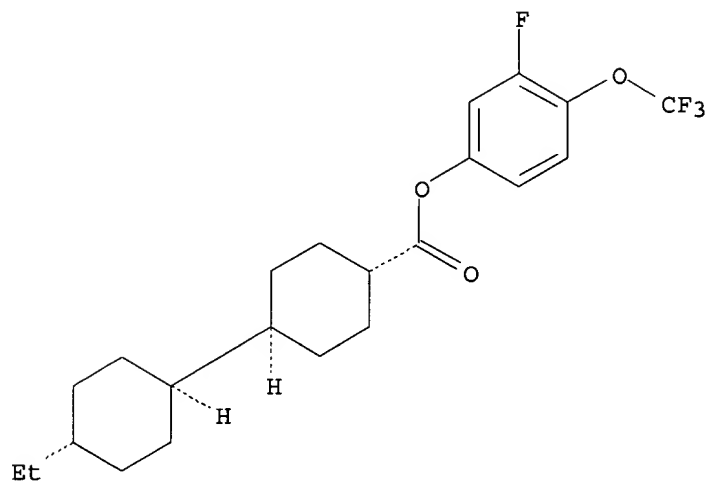


CM 2

CRN 279246-59-2

CMF C22 H28 F4 O3

Relative stereochemistry.

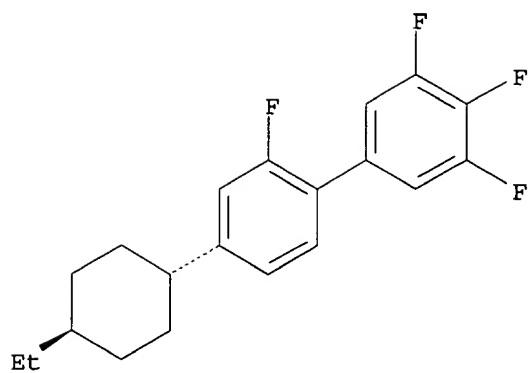


CM 3

CRN 174805-87-9

CMF C20 H20 F4

Relative stereochemistry.

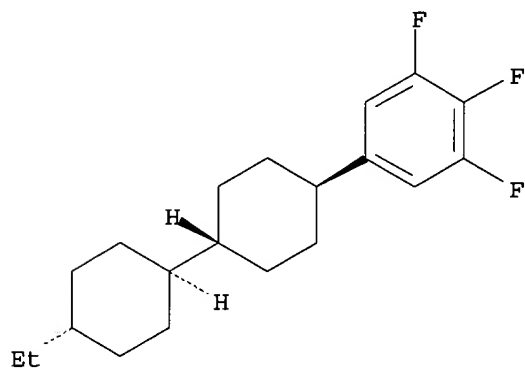


CM 4

CRN 139215-80-8

CMF C20 H27 F3

Relative stereochemistry.

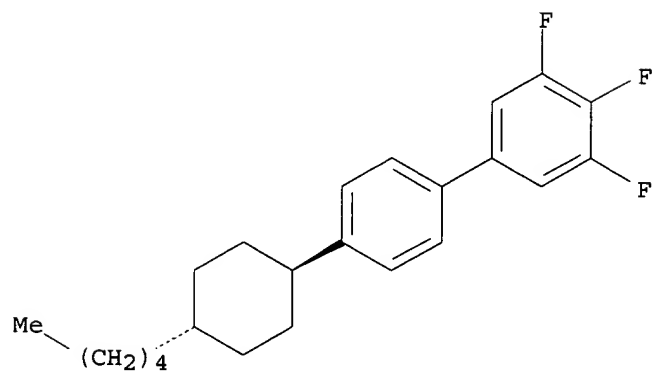


CM 5

CRN 137019-95-5

CMF C23 H27 F3

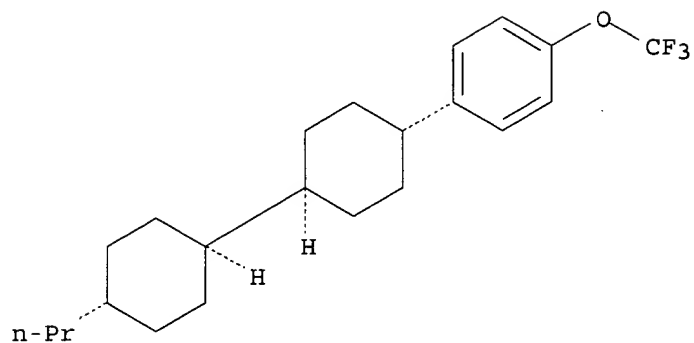
Relative stereochemistry.



CM 6

CRN 133937-72-1
CMF C22 H31 F3 O

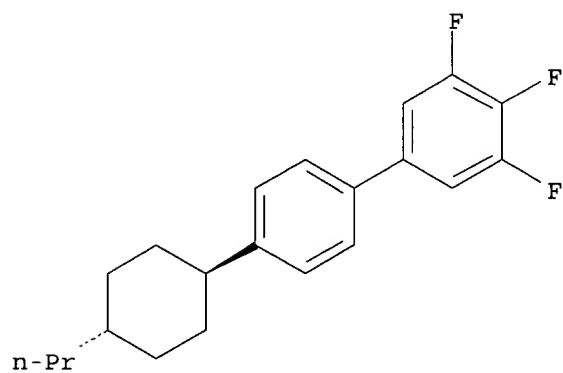
Relative stereochemistry.



CM 7

CRN 132123-39-8
CMF C21 H23 F3

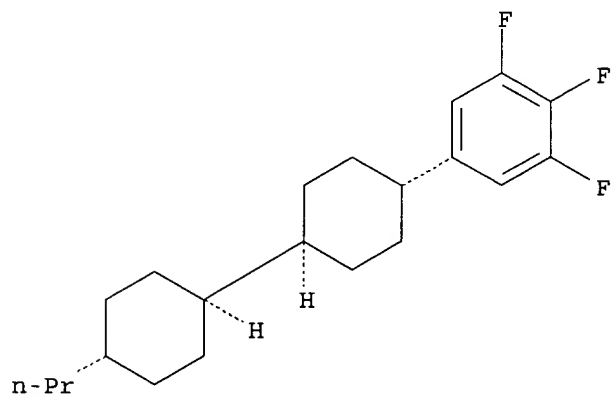
Relative stereochemistry.

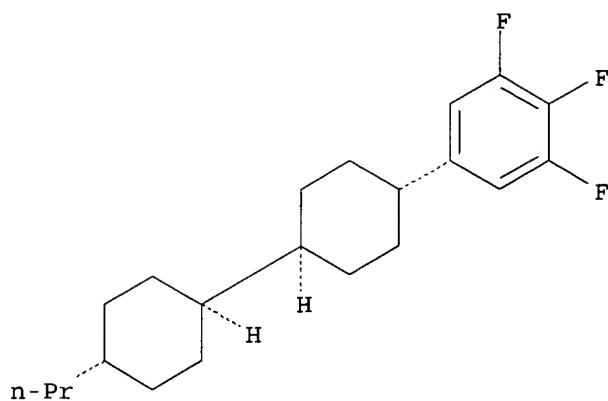


CM 8

CRN 131819-23-3
CMF C21 H29 F3

Relative stereochemistry.



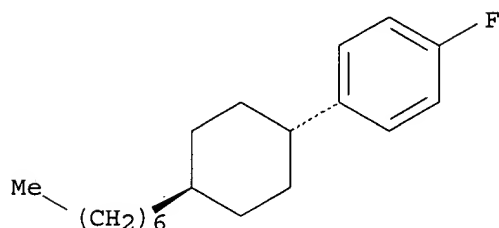


CM 9

CRN 76802-59-0

CMF C19 H29 F

Relative stereochemistry.



L3 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2002 ACS

AN 2001:581512 CAPLUS

DN 135:160219

TI Liquid crystal composition and liquid crystal display device

IN Yanai, Motoki; Kubo, Yasuhiro; Nakagawa, Etsuo

PA Chisso Corp., Japan; Chisso Petrochemical Corp.

SO Eur. Pat. Appl., 39 pp.

CODEN: EPXXDW

DT Patent

LA English

IC ICM C09K019-30

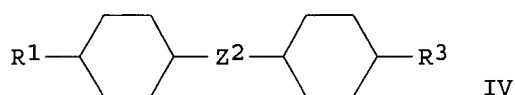
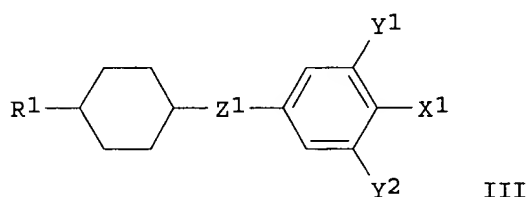
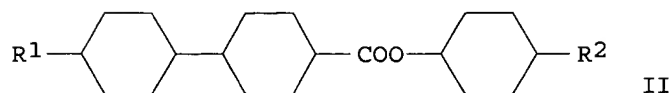
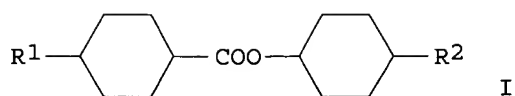
ICS C09K019-42

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 75

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1122292	A2	20010808	EP 2001-102169	20010202
	EP 1122292	A3	20011107		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2001288470	A2	20011016	JP 2000-160243	20000530
	US 2002066887	A1	20020606	US 2001-773536	20010202
PRAI	JP 2000-27959	A	20000204		
	JP 2000-160243	A	20000530		
OS	MARPAT 135:160219				
GI					



AB The present invention is to provide a liq. crystal compn. which has particularly a high upper limit temp. of a nematic phase, a low lower limit temp. of the nematic phase and a small birefringence while satisfying general characteristics required to the liq. crystal compn. for an AM-LCD. Liq. crystal compns. are disclosed which comprising a component (1) comprising at least one compd. selected from the group of compds. represented by I or II (R1,2 = alkyl, alkoxy, C1-10 alkoxymethyl or C2-10 alkenyl), a component (2) comprising at least one compd. selected from the group of compds. such as III (Z1 = single bond or -CH2CH2-; X1 = F, Cl, OCHF2 or OCF3; Y1-2 = H or F) and a component (3) comprising at least one compd. selected from the group of compds. such as IV (R3 = alkyl, alkoxy, C1-10 alkoxymethyl, C2-10 alkenyl; R1 = alkyl, alkoxy, C1-10 alkoxymethyl or C2-10 alkenyl; Z2 = single bond, -CH2CH2- or -CH=CH-).

ST nematic liq crystal compn cyclohexyl phenyl deriv; active matrix liq crystal display device

IT Liquid crystal displays
Liquid crystals

(Liq. crystal compn. and liq. crystal display device)

IT	73255-59-1	73255-62-6	76802-59-0	79284-92-7	79646-68-7
	79709-84-5	79912-81-5	80944-44-1	81701-13-5	82832-27-7
	82832-32-4	82832-57-3	82832-58-4	83242-83-5	84360-96-3
	84655-98-1	84656-75-7	86778-48-5	88038-92-0	88416-69-7
	88416-70-0	88416-84-6	88878-50-6	89129-90-8	91545-93-6
	93393-41-0	94737-80-1	94840-77-4	96624-52-1	97398-80-6
	98321-63-2	102714-86-3	102714-92-1	102714-95-4	103072-61-3
	105351-42-6	107215-73-6	110881-30-6	117943-37-0	128169-01-7
	129738-34-7	129738-44-9	131819-23-3	131819-24-4	131819-25-5
	132123-45-6	133058-92-1	133914-49-5	133937-72-1	136428-57-4
	136903-58-7	137644-54-3	137784-79-3	137810-19-6	139136-72-4
	139395-98-5	139420-31-8	142223-46-9	145305-20-0	148462-51-5
	153429-47-1	153429-48-2	160147-99-9	160910-17-8	173089-33-3

173535-86-9 175859-25-3 178689-87-7 181943-58-8 **184161-88-4**
 199433-38-0 207462-53-1 207463-16-9 208338-50-5 208338-52-7
 208338-54-9 208338-57-2 208338-60-7 208338-71-0 208530-75-0
 208531-48-0 208531-64-0 213591-64-1 323575-48-0 352565-75-4
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 352566-04-2 352566-05-3 352566-06-4

RL: DEV (Device component use); USES (Uses)

(Liq. crystal compn. and liq. crystal display device)

IT **184161-88-4**

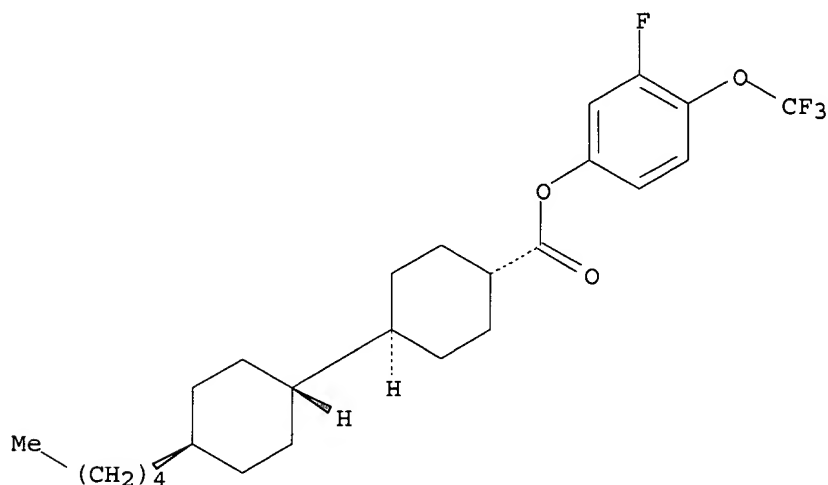
RL: DEV (Device component use); USES (Uses)

(Liq. crystal compn. and liq. crystal display device)

RN 184161-88-4 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-pentyl-, 3-fluoro-4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L3 ANSWER 5 OF 10 CAPLUS COPYRIGHT 2002 ACS

AN 2000:574076 CAPLUS

DN 133:157767

TI Liquid crystalline medium for liquid crystal display

IN Heckmeier, Michael; Schuler, Brigitte; Reuter, Marcus; Poetsch, Eike; Meyer, Volker

PA Merck Patent G.m.b.H., Germany

SO Ger. Offen., 34 pp.

CODEN: GWXXBX

DT Patent

LA German

IC ICM C09K019-08

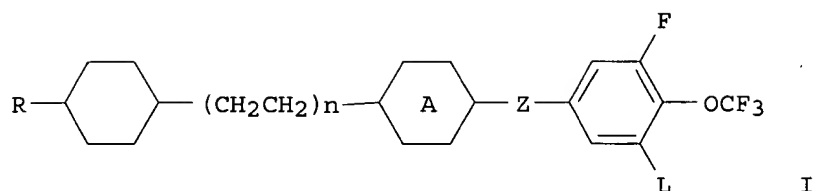
ICS G02F001-137; G09F009-35

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 75

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 10004636	A1	20000817	DE 2000-10004636	20000203
PRAI	DE 1999-19906387	A1	19990216		
OS	MARPAT 133:157767				
GI					



AB The title liq. cryst. medium is based on the mixt. of pos. dielec. anisotropic polar compds., wherein the medium contains .gtoreq.1 compd.(s) represented by general formula I (R = H, C1-15-alkyl, alkenyl; L = H, F; A = trans-1,4-cyclohexylene; Z = COO, CH2CH2, CH2O, OCF2, CF2O, OCH2, (CH2)4, single bond; n = 1, 2). The liq. cryst. medium shows good chem. and thermal resistances.

ST nematic liq cryst medium liq crystal display

IT Liquid crystal displays

(nematic liq. cryst. medium for liq. crystal display)

IT Liquid crystals

(nematic; nematic liq. cryst. medium for liq. crystal display)

IT 74240-64-5 76802-61-4 84540-37-4 84816-56-8 85312-59-0
 86776-50-3 96624-52-1 97398-80-6 102714-93-2 102714-95-4
 106349-49-9 129738-34-7 131819-23-3 132123-39-8 132123-45-6
 133261-31-1 133914-49-5 133937-72-1 134412-18-3 135734-59-7
 135734-60-0 137019-95-5 137644-54-3 137784-79-3 139215-80-8
 139215-82-0 139215-88-6 139215-89-7 139420-31-8 140911-33-7
 159119-17-2 167306-96-9 173837-35-9 173837-36-0 174805-87-9
 175859-25-3 178689-87-7 181943-55-5 **184161-88-4**
 205582-37-2 **279246-59-2** **279246-60-5** 279246-65-0
 287493-79-2

RL: TEM (Technical or engineered material use); USES (Uses)
 (in nematic liq. cryst. medium for liq. crystal display)

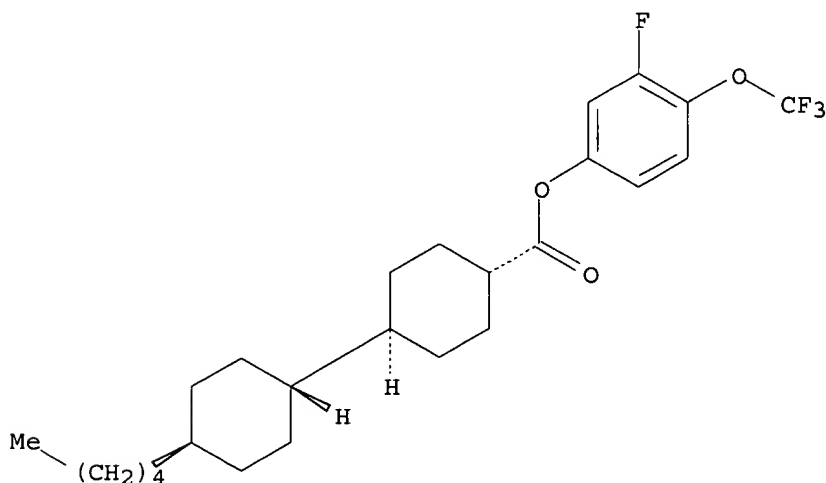
IT **184161-88-4** **279246-59-2** **279246-60-5**

RL: TEM (Technical or engineered material use); USES (Uses)
 (in nematic liq. cryst. medium for liq. crystal display)

RN 184161-88-4 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-pentyl-, 3-fluoro-4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

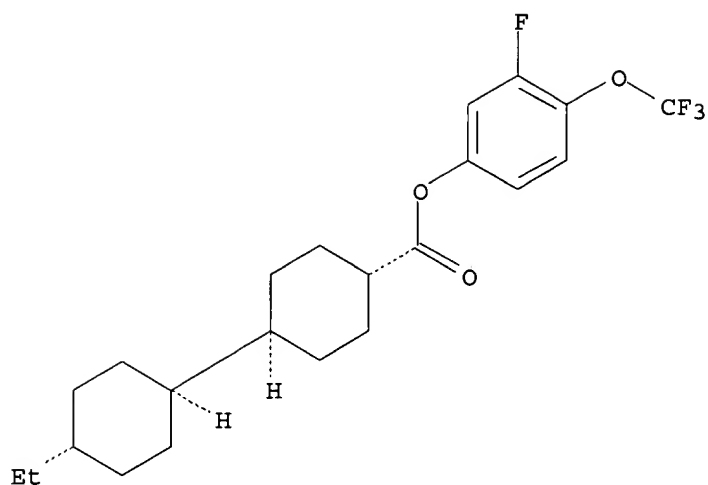
Relative stereochemistry.



RN 279246-59-2 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-ethyl-, 3-fluoro-4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

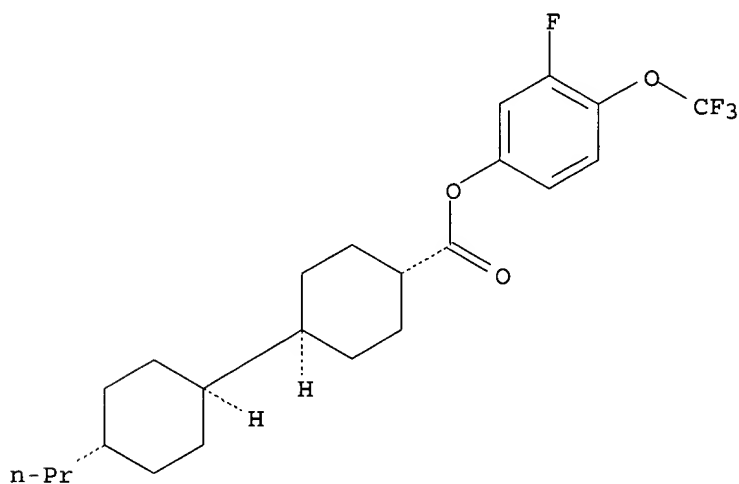
Relative stereochemistry.



RN 279246-60-5 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-propyl-, 3-fluoro-4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L3 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2002 ACS

AN 2000:441891 CAPLUS

DN 133:81646

TI Liquid crystal medium for liquid crystal display

IN Heckmeier, Michael; Schuler, Brigitte; Tarumi, Kazuaki; Kirsch, Peer; Reiffenrath, Volker

PA Merck Patent G.m.b.H., Germany

SO PCT Int. Appl., 81 pp.

CODEN: PIXXD2

DT Patent

LA German

IC ICM C09K019-30

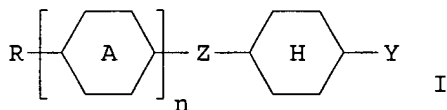
ICS C09K019-34; C09K019-42

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 75

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000037586	A1	20000629	WO 1999-EP9919	19991214
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	DE 19859421	A1	20000629	DE 1998-19859421	19981222
	EP 1144548	A1	20011017	EP 1999-968797	19991214
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	JP 2002533526	T2	20021008	JP 2000-589645	19991214
PRAI	DE 1998-19859421	A	19981222		
	WO 1999-EP9919	W	19991214		
OS	MARPAT 133:81646				
GI					



AB The invention relates to a liq. crystal medium based on a mixt. of polar compds. having pos. dielec. anisotropy, wherein the medium contains one or more compds. of general formula I (R = H, C1-15-alkyl, alkenyl; A = trans-1,4-cyclohexylene, cyclohexenylene; Y = halogenated C.1toreq.6-alkyl, halogenated C.1toreq.6-alkenyl, halogenated C.1toreq.6-alkoxy, halogenated C.1toreq.6-alkenyloxy; Z = -CH2O-, -OCH2-, -CH2CH2-, -CH:CH-, -CF2O-, -OCF2-, -C2F4-, single bond; n = 1, 2).

ST nematic liq crystal mixt liq crystal display

IT Liquid crystal displays

Liquid crystals

(nematic liq. crystal mixt. suitable for matrix liq. crystal display)

IT	73255-62-6	76802-59-0	83242-83-5	87941-91-1	88038-92-0
	89129-90-8	95756-62-0	96624-52-1	97398-80-6	98321-58-5
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	279246-64-9	279246-65-0	279246-66-1	279246-67-2	279246-68-3
	279246-69-4	279246-70-7	279246-71-8		

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(in nematic liq. crystal mixt. suitable for matrix liq. crystal display)

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Merck Patent; DE 19707154 A 1997 CAPLUS

(2) Merck Patent G M B H; WO 9012073 A 1990 CAPLUS

- (3) Merck Patent G M B H; DE 4023107 A 1992 CAPLUS
- (4) Merck Patent G M B H; WO 9202597 A 1992 CAPLUS
- (5) Merck Patent Gesellschaft Mit Beschraenkter Haftung Germany; WO 9206148 A 1992 CAPLUS
- (6) Merck Patent Gmbh; WO 9119772 A 1991 CAPLUS
- (7) Merck Patent Gmbh; DE 4123389 A 1993 CAPLUS
- (8) Merck Patent Gmbh; DE 4308028 A 1994 CAPLUS

IT 184161-88-4 279246-59-2 279246-60-5

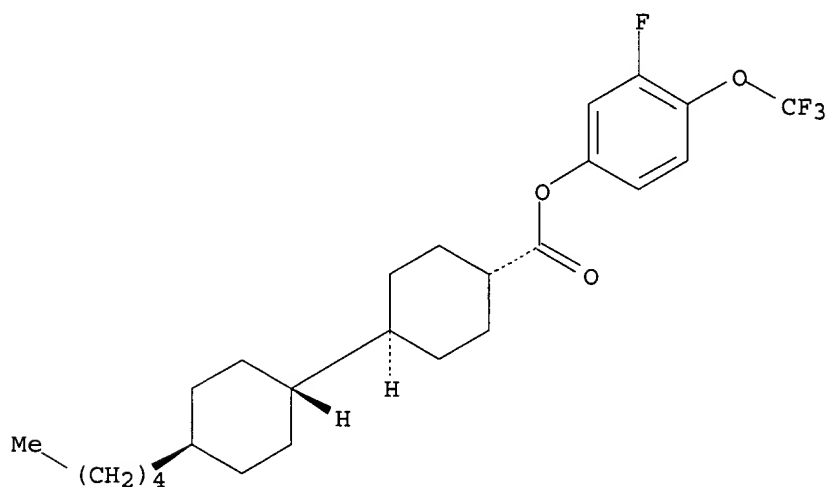
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(in nematic liq. crystal mixt. suitable for matrix liq. crystal display)

RN 184161-88-4 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-pentyl-, 3-fluoro-4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

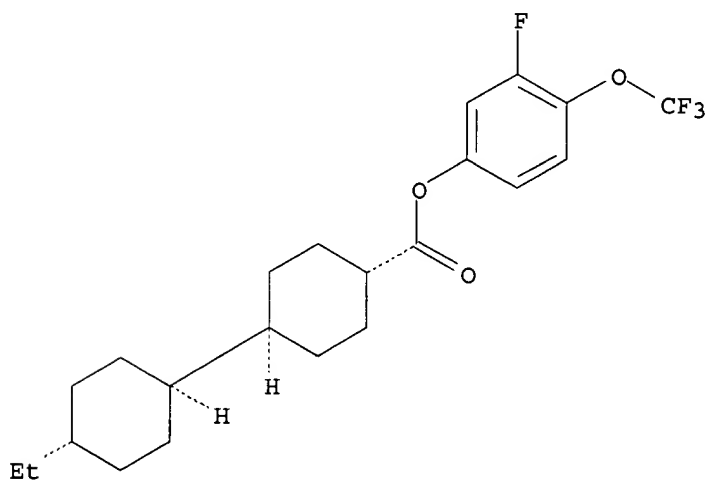
Relative stereochemistry.



RN 279246-59-2 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-ethyl-, 3-fluoro-4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

Relative stereochemistry.

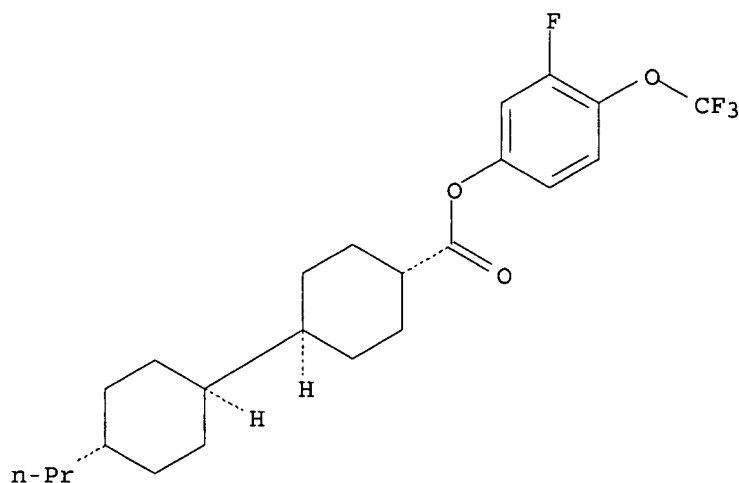


RN 279246-60-5 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-propyl-, 3-fluoro-4-

(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L3 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2002 ACS

AN 1997:48492 CAPLUS

DN 126:59727

TI Preparation of fluorine-substituted benzene derivatives as liquid-crystal composition for liquid-crystal display devices

IN Kondo, Tomoyuki; Haseba, Yasuhiro; Koizumi, Yasuyuki; Miyazawa, Kazutoshi; Hachiya, Norihisa; Nakagawa, Etsuo

PA Chisso Corp., Japan

SO PCT Int. Appl., 149 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

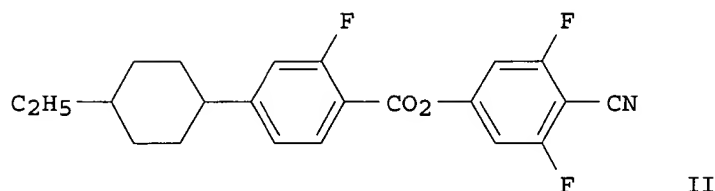
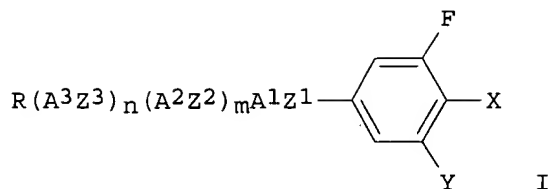
IC ICM C07C043-225

ICS C07C043-192; C07C069-773; C07C069-86; C07C069-88; C07C069-75; C07C069-753; C07C069-757; C07D213-79; C07D213-55; C07D213-30; C07D239-28; C07D319-06; C09K019-14; C09K019-20; C09K019-30; C09K019-34; C09K019-42; C09K019-44; C09K019-46

CC 25-3 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds) Section cross-reference(s): 75

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9632365	A1	19961017	WO 1996-JP1010	19960412
	W: AU, CA, CN, JP, KR, RU, SG, US, VN				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9652885	A1	19961030	AU 1996-52885	19960412
	EP 820976	A1	19980128	EP 1996-909354	19960412
	EP 820976	B1	20010221		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	CN 1184462	A	19980610	CN 1996-193858	19960412
	CN 1088453	B	20020731		
	JP 3025534	B2	20000327	JP 1996-530886	19960412
	AT 199242	E	20010315	AT 1996-909354	19960412
	US 6051288	A	20000418	US 1997-913022	19970926
PRAI	JP 1995-112551	A	19950412		
	WO 1996-JP1010	W	19960412		
OS	MARPAT 126:59727				
GI					



- AB The title compds. (I; R = C1-10 alkyl, alkoxy, C2-10 alkenyl; m, n = 0-1; A1, A2, A3 = trans-1,4-cyclohexylene, 1,4-phenylene wherein one or more H atoms on the ring may be replaced by F atoms, pyridin-2,5-diyl, etc.; Z1, Z2, Z3 = CO2, O2C, (CH2)2, CH2O, OCH2 or a covalent bond, with at least one of them being an ester linkage, CH2O or OCH2; X = CF3, CF2H, CFH2, OCF3, OCF2H, cyano; Y = H or F) are prepd. I contg. liq.-crystal display devices are claimed. I show high dielec. anisotropy and are reduced in the temp. dependence of threshold voltage, and improved in the soly. in other liq.-crystal materials at low temp. Thus, 3,5-difluoro-4-trifluoromethylphenol was reacted with 4-pentylbenzoyl chloride in the presence of pyridine to give 65.2% I (R = C5H11, m = n = 0, A1 = 1,4-phenylene, Z1 = CO2, X = CF3, Y = F). A nematic liq.-crystal compn. contg. 15 wt.% the title compd. (II), 24 wt.% 4-(trans-4-propylcyclohexyl)benzonitrile, 36 wt.% 4-(trans-4-pentylcyclohexyl)benzonitrile, 25 wt.% 4-(trans-4-heptylcyclohexyl)benzonitrile, and 15 wt.% 4-(trans-4-pentylcyclohexyl)-4'-cyanobiphenylbenzonitrile showed 75.1, 55.7, and 0.144 for NI point, dielec. anisotropy .DELTA..epsilon., and refractive index anisotropy .DELTA.n in a 8.8 .mu.m thickness cell at 1.29 V10 thresh hold voltage resp.
- ST fluorobenzene prepn liq crystal compn; display device liq crystal fluorobenzene prepn; benzene fluorine substituted liq crystal compn; cyclohexylenebenzene prepn liq crystal compn
- IT Liquid crystal displays
Liquid crystal displays
Liquid crystals
(prepn. of fluorine substituted benzene derivs. as liq. crystal compn. for liq. crystal display devices)
- IT 22692-80-4 35684-12-9 39969-26-1 39969-28-3 56131-48-7
56131-49-8 58743-75-2 61203-99-4 63221-88-5 66230-67-9
67679-49-6 67679-51-0 67679-62-3 67679-63-4 68452-78-8
74800-54-7 76802-59-0 79912-81-5 79912-82-6 79945-42-9
80285-16-1 80944-44-1 81701-13-5 81711-13-9 81793-57-9
82492-42-0 82832-27-7 82832-57-3 84655-98-1 84656-75-7
84656-77-9 85312-59-0 85547-03-1 85583-83-1 85896-79-3
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95495-15-1 95906-29-9 95906-34-6 96184-40-6 96624-52-1
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101478-47-1 106021-42-5 107215-66-7 107215-67-8 107215-73-6
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118164-50-4 118164-51-5 119511-11-4 133856-79-8 133857-02-0
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134412-17-2 134412-18-3 139136-72-4 145918-41-8 148150-89-4
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 184161-94-2 186772-35-0

RL: TEM (Technical or engineered material use); USES (Uses)

(liq. crystal compn.; prepn. of fluorine substituted benzene derivs. as liq. crystal compn. for liq. crystal display devices)

IT 184161-66-8P 184161-68-0P 184161-70-4P 184161-71-5P
184161-72-6P 184161-73-7P 184161-74-8P 184161-75-9P
 184161-77-1P 184161-78-2P 184161-79-3P 184161-81-7P 184161-82-8P
 184161-83-9P 184161-85-1P 184161-86-2P 184161-87-3P
184161-88-4P 184161-89-5P 184161-90-8P 184161-91-9P
 184218-96-0P

RL: DEV (Device component use); SPN (Synthetic preparation); TEM

(Technical or engineered material use); PREP (Preparation); USES (Uses)

(prepn. of fluorine substituted benzene derivs. as liq. crystal compn. for liq. crystal display devices)

IT 6833-47-2 13064-83-0 26311-45-5, 4-Pentylbenzoic acid 65355-29-5,
 4-(trans-4-Propylcyclohexyl)benzoic acid 65355-32-0 71458-13-4
 71458-14-5 82562-86-5 91062-39-4, 4-Propylbenzyl bromide 116640-11-0
 123843-57-2, 2,6-Difluoro-4-hydroxybenzonitrile 132248-39-6,
 2-Fluoro-4-[2-(trans-4-pentylcyclohexyl)ethyl]benzoic acid 177596-38-2,
 3-Fluoro-4-trifluoromethoxyphenol 182116-30-9 184162-48-9
 184162-50-3

RL: RCT (Reactant); RACT (Reactant or reagent)

(prepn. of fluorine substituted benzene derivs. as liq. crystal compn. for liq. crystal display devices)

IT 49763-65-7P, 4-Pentylbenzoyl chloride 67589-87-1P, Trans-4-Ethylcyclohexylcarbonyl chloride 81005-00-7P, 4-(trans-4-Propylcyclohexyl)benzoyl chloride 184162-38-7P, 2-Fluoro-4-propylbenzoyl chloride 184162-41-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(prepn. of fluorine substituted benzene derivs. as liq. crystal compn. for liq. crystal display devices)

IT **184161-72-6P 184161-88-4P**

RL: DEV (Device component use); SPN (Synthetic preparation); TEM

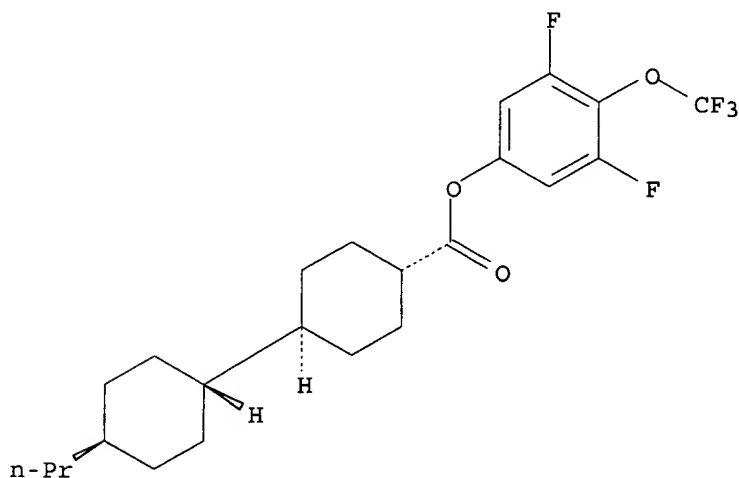
(Technical or engineered material use); PREP (Preparation); USES (Uses)

(prepn. of fluorine substituted benzene derivs. as liq. crystal compn. for liq. crystal display devices)

RN 184161-72-6 CAPLUS

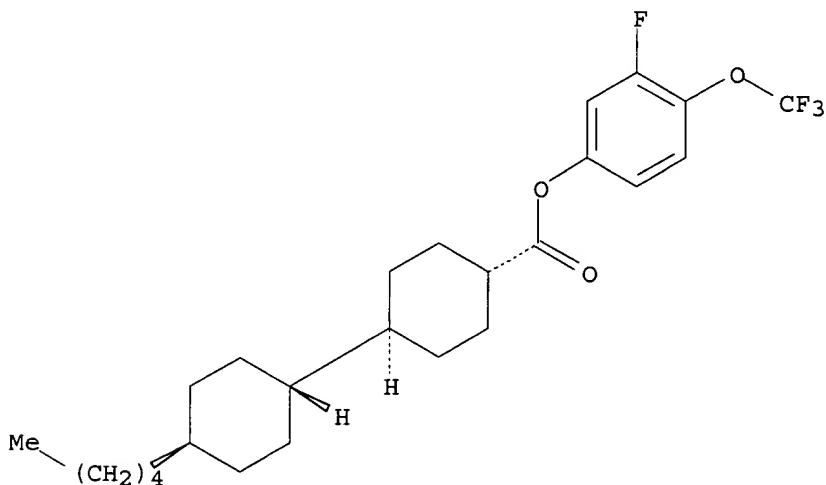
CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-propyl-, 3,5-difluoro-4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 184161-88-4 CAPLUS
 CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-pentyl-, 3-fluoro-4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L3 ANSWER 8 OF 10 CAPLUS COPYRIGHT 2002 ACS
 AN 1996:761672 CAPLUS
 DN 126:39830
 TI Liquid crystal composition for display devices
 IN Kondo, Tomoyuki; Haseba, Yasuhiro; Koizumi, Yasuyuki; Miyazawa, Kazutoshi; Hachiya, Norihisa; Nakagawa, Etsuo
 PA Chisso Corp., Japan
 SO PCT Int. Appl., 29 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 IC ICM C09K019-46
 ICS G02F001-13
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 75

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9632458	A1	19961017	WO 1996-JP1011	19960412
	W: AU, CA, CN, JP, KR, RU, SG, US, VN				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9652886	A1	19961030	AU 1996-52886	19960412
	EP 765926	A1	19970402	EP 1996-909355	19960412
	EP 765926	B1	20000823		
	R: DE, FR, GB				
	CN 1184462	A	19980610	CN 1996-193858	19960412
	CN 1088453	B	20020731		
	US 5733477	A	19980331	US 1996-750326	19961205
PRAI	JP 1995-112551	A	19950412		
	WO 1996-JP1011	W	19960412		
OS	MARPAT 126:39830				
GI					

AB A liq. crystal compn. for display device fabrication comprises a compd. represented by the general formula I (R_1 = C1-10 alkyl or C2-10 alkenyl; A = trans-1,4-cyclohexylene or F-substituted 1,4-phenylene; X = CF₃ or OCF₃; Y = H or F; m = an integer of 0-2)) and a compd. represented by general formulas II-V (R_2 = C1-10 alkyl). The liq. crystal compn. satisfies various characteristics required of active-matrix liq.-crystal display devices and has a reduced threshold voltage, an excellent low-temp. compatibility, and a wide nematic phase range.

ST fluorophenylalkylcyclohexane deriv liq crystal display;
fluorophenyloxycarbonylalkylcyclohexane deriv liq crystal display

IT Liquid crystals
(fluorophenylalkylcyclohexanes and fluorophenyloxycarbonylalkylcyclohexanes as)

IT Liquid crystal displays
Liquid crystal displays
(fluorophenylalkylcyclohexanes and fluorophenyloxycarbonylalkylcyclohexanes for)

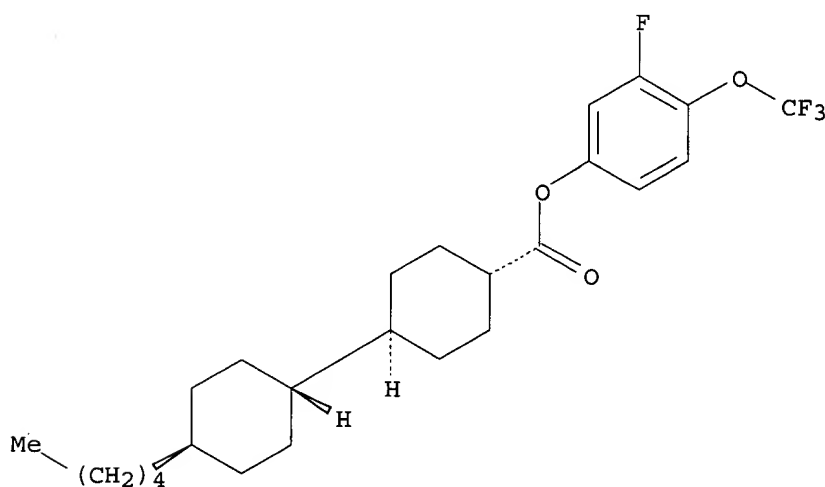
IT 82832-34-6 86778-48-5 131819-23-3 131819-24-4 131819-25-5
132123-39-8 132123-43-4 132123-45-6 137019-95-5 137529-40-9
137529-41-0 137529-43-2 137529-56-7 139420-31-8 144583-01-7
145131-04-0 145131-05-1 148462-51-5 148462-52-6 175859-23-1
175859-24-2 175859-25-3 184161-83-9 184161-87-3 **184161-88-4**
184218-79-9 184218-85-7 184218-96-0 184218-97-1 **184218-98-2**
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(electrooptical display devices using liq. crystal compns. contg.)

IT **184161-88-4 184218-98-2**
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(electrooptical display devices using liq. crystal compns. contg.)

RN 184161-88-4 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-pentyl-, 3-fluoro-4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

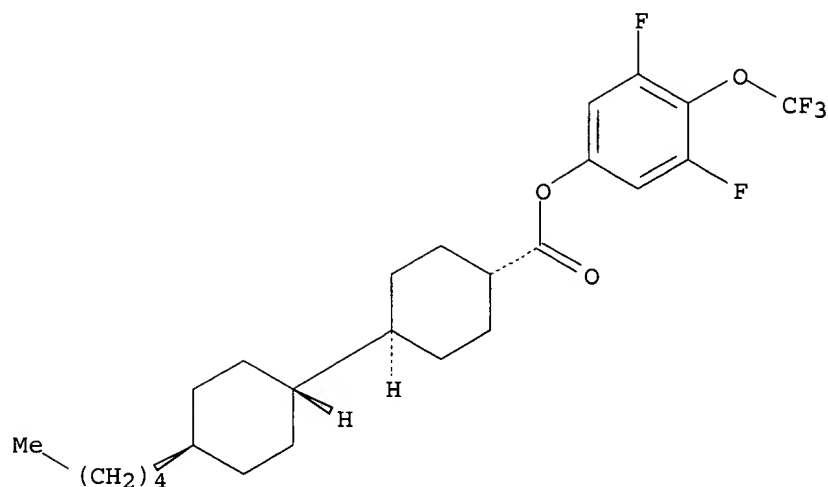
Relative stereochemistry.



RN 184218-98-2 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-pentyl-, 3,5-difluoro-4-(trifluoromethoxy)phenyl ester, [trans(trans)]- (9CI) (CA INDEX NAME)

Relative stereochemistry.

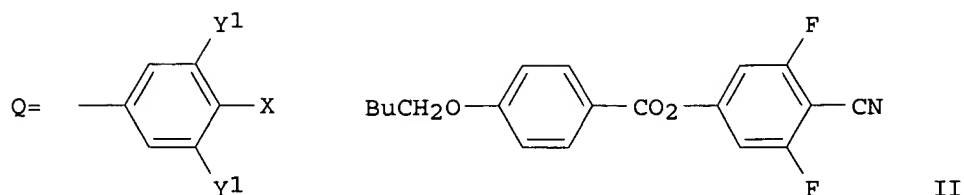


L3 ANSWER 9 OF 10 CAPLUS COPYRIGHT 2002 ACS
 AN 1996:701520 CAPLUS
 DN 125:328294
 TI Preparation of phenyl benzoates and analogs as liquid crystal components
 IN Kondo, Tomoyuki; Matsui, Shuichi; Koizumi, Yasuyuki; Shibata, Koichi;
 Haseba, Yasuhiro; Hachiya, Norihisa; Nakagawa, Etsuo; Miyazawa, Kazutoshi
 PA Chisso Corp., Japan
 SO Eur. Pat. Appl., 111 pp.
 CODEN: EPXXDW

DT Patent
 LA English
 IC ICM C07C255-55
 ICS C09K019-20; C09K019-30; C09K019-34; C07C069-773; C07C069-75;
 C07D239-28; C07D213-60; C07D319-06
 CC 25-18 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
 Section cross-reference(s): 75

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 738709	A2	19961023	EP 1996-102672	19960222
	EP 738709	A3	19970716		
	EP 738709	B1	20020123		
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE				
	TW 470768	B	20020101	TW 1995-84106009	19950613
	JP 09031024	A2	19970204	JP 1996-50889	19960213
	JP 09031462	A2	19970204	JP 1996-50890	19960213
	JP 09031463	A2	19970204	JP 1996-50891	19960213
	CN 1136067	A	19961120	CN 1996-105985	19960220
	US 5755994	A	19980526	US 1996-605776	19960222
	US 5820784	A	19981013	US 1996-606032	19960222
	EP 1010687	A2	20000621	EP 2000-103442	19960222
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE				
	AT 212333	E	20020215	AT 1996-102672	19960222
PRAI	JP 1995-59822	A	19950222		
	JP 1995-138625	A	19950512		
	EP 1996-102672	A3	19960222		
OS	MARPAT 125:328294				
GI					



AB RO(CH₂)_l(A₁Z₁)_m(A₂Z₂)_n(A₃Z₃)OR₁ (I; A₁-A₃ = trans-1,4-cyclohexylene, 1,4-phenylene, pyridin-2,5-diyl, etc.; R = alkyl; R₁ = Ph group Q; X = cyano, CF₃, CHF₂, etc.; Y₁,Y₂ = H or F; 1 of Z₁-Z₃ = CO₂ and the others = bond, CO₂, CH₂CH₂; l = 1-9; m,n,o = 0 or 1) were prepd. Thus, 4-(pentyloxymethyl)benzoic acid was treated with SOCl₂ and the product esterified by 2,6-difluoro-4-hydroxybenzonitrile to give title compd. II. Data for properties of compns. comprising I were given.

ST phenyl benzoate prepn liq crystal component

IT Liquid crystals
(prepn. of Ph benzoates and analogs as liq. crystal components)

IT Optical imaging devices
(electrooptical liq.-crystal, prepn. of Ph benzoates and analogs as liq. crystal components)

IT 182567-20-0P 182567-23-3P **182567-27-7P** 182567-36-8P
183240-50-8P 183240-51-9P 183240-52-0P 183240-53-1P 183240-54-2P
183240-55-3P 183240-56-4P 183240-57-5P 183240-58-6P 183240-59-7P
183240-60-0P 183240-61-1P 183240-62-2P 183240-63-3P 183240-64-4P
183240-65-5P 183240-66-6P 183240-67-7P 183240-68-8P 183240-69-9P
RL: MOA (Modifier or additive use); SPN (Synthetic preparation); PREP
(Preparation); USES (Uses)
(prepn. of Ph benzoates and analogs as liq. crystal components)

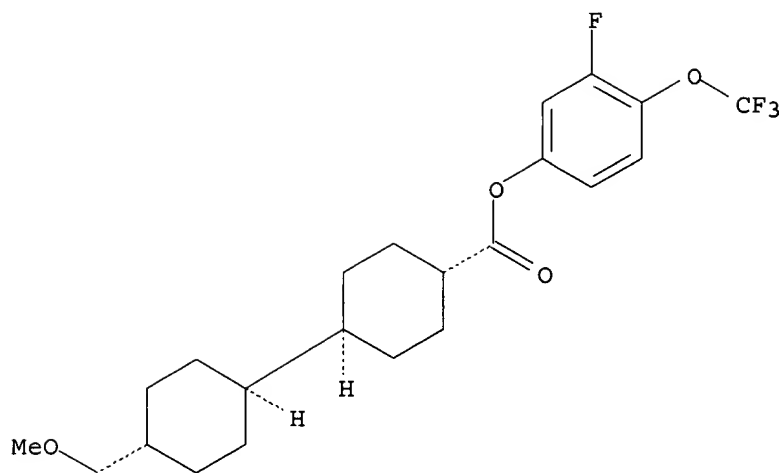
IT 402-45-9, 4-Trifluoromethylphenol 89326-75-0, 4-Butoxymethylbenzoic acid
91522-03-1, 4-Propoxymethylbenzoic acid 104563-42-0,
4-Ethoxyethylbenzoic acid 123843-57-2, 2,6-Difluoro-4-
hydroxybenzonitrile 123843-59-4 183240-70-2, 4-
(Pentyloxymethyl)benzoic acid 183240-71-3, 2-Fluoro-4-
propoxymethylbenzoic acid 183240-72-4 183240-73-5 183240-74-6
183240-75-7 183240-76-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of Ph benzoates and analogs as liq. crystal components)

IT **182567-27-7P**
RL: MOA (Modifier or additive use); SPN (Synthetic preparation); PREP
(Preparation); USES (Uses)
(prepn. of Ph benzoates and analogs as liq. crystal components)

RN 182567-27-7 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-(methoxymethyl)-,
3-fluoro-4-(trifluoromethoxy)phenyl ester, [trans(trans)]- (9CI) (CA
INDEX NAME)

Relative stereochemistry.



L3 ANSWER 10 OF 10 CAPLUS COPYRIGHT 2002 ACS
 AN 1996:643763 CAPLUS
 DN 125:288901
 TI Liquid crystal composition and liquid crystal display device
 IN Kondo, Tomoyuki; Matsui, Shuichi; Koizumi, Yasuyuki; Shibata, Koichi;
 Haseba, Yasuhiro; Hachiya, Norihisa; Nakagawa, Etsuo; Miyazawa, Kazutoshi
 PA Chisso Corp., Japan
 SO Eur. Pat. Appl., 23 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 IC ICM C09K019-46
 ICS C09K019-30
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 Section cross-reference(s): 75

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 728830	A2	19960828	EP 1996-102671	19960222
	EP 728830	A3	19960904		
	EP 728830	B1	20000503		
	R: DE, FR, GB				
	TW 470768	B	20020101	TW 1995-84106009	19950613
	JP 09031024	A2	19970204	JP 1996-50889	19960213
	JP 09031462	A2	19970204	JP 1996-50890	19960213
	JP 09031463	A2	19970204	JP 1996-50891	19960213
	CN 1136067	A	19961120	CN 1996-105985	19960220
	US 5755994	A	19980526	US 1996-605776	19960222
	US 5820784	A	19981013	US 1996-606032	19960222
	AT 212333	E	20020215	AT 1996-102672	19960222
PRAI	JP 1995-59822	A	19950222		
	JP 1995-138625	A	19950512		
OS	MARPAT 125:288901				
GI					

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB A liq. crystal compn. is disclosed which contains, as the first component,
 at least one of the compds. expressed by the formulas I to III (R1 = C1-10
 alkyl; A1, A2 = trans-1,4-cyclohexylene or 1,4-phenylene; X = OCF3 or CF3;

Y = H or F; n = 0 or 1) and, as the second component, at least one of the compds. expressed by the formulas IV and V (R2 = C1-10 alkyl). According to the present invention, a liq. crystal compn. which particularly has a small Vth, is excellent in compatibility at low temp., and has a large nematic phase range can be provided while satisfying several characteristics required for liq. crystal compns. for active-matrix liq.-crystal display devices.

ST liq crystal compn display device; fluorophenylcyclohexane deriv liq crystal display; fluorophenyloxycarbonylcyclohexane deriv liq crystal display

IT Liquid crystals
(fluorophenylcyclohexane derivs. and fluorophenyloxycarbonylcyclohexane derivs. as)

IT Optical imaging devices
(electrooptical liq.-crystal, fluorophenylcyclohexane derivs. and fluorophenyloxycarbonylcyclohexane derivs. for)

IT 82832-34-6 86778-48-5 131819-23-3 131819-24-4 131819-25-5
132123-39-8 132123-43-4 132123-45-6 132123-46-7 136922-42-4
137019-95-5 137529-40-9 137529-41-0 137529-43-2 137529-56-7
139420-31-8 144583-01-7 145131-05-1 148462-51-5 148462-52-6
161142-00-3 175859-23-1 175859-24-2 175859-25-3 178689-87-7
182567-20-0 182567-21-1 182567-22-2 182567-23-3 182567-27-7
182567-28-8 182567-36-8 182567-38-0 182567-39-1

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(electrooptical display devices using nematic liq. crystal compns. contg. fluorophenylcyclohexane derivs. and)

IT 182567-27-7 182567-39-1

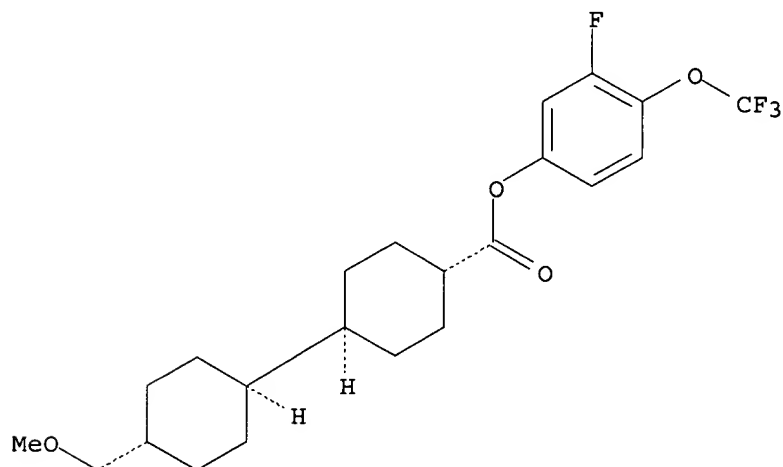
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(electrooptical display devices using nematic liq. crystal compns. contg. fluorophenylcyclohexane derivs. and)

RN 182567-27-7 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-(methoxymethyl)-, 3-fluoro-4-(trifluoromethoxy)phenyl ester, [trans(trans)]- (9CI) (CA INDEX NAME)

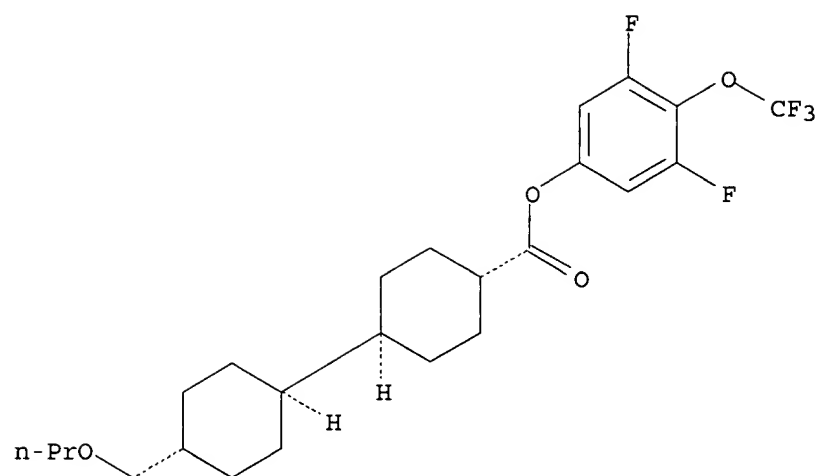
Relative stereochemistry.



RN 182567-39-1 CAPLUS

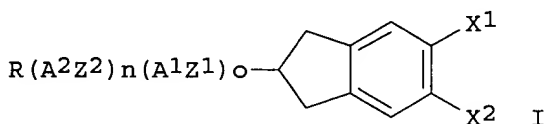
CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-(propoxymethyl)-, 3,5-difluoro-4-(trifluoromethoxy)phenyl ester, [trans(trans)]- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L6 ANSWER 1 OF 13 CAPLUS COPYRIGHT 2002 ACS
 AN 2002:449802 CAPLUS
 DN 137:13354
 TI Liquid crystalline medium with improved physical properties suitable for liquid crystal display
 IN Heckmeier, Michael; Engel, Martin; Schuler, Brigitte; Bremer, Matthias; Pauluth, Detlef
 PA Merck Patent G.m.b.H., Germany
 SO PCT Int. Appl., 77 pp.
 CODEN: PIXXD2
 DT Patent
 LA German
 IC ICM C09K019-32
 ICS C09K019-42; C09K019-44
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 75
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002046330	A1	20020613	WO 2001-EP10699	20010917
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG DE 10155071 A1 20020808 DE 2001-10155071 20011109 PRAI DE 2000-10060472 A 20001206 OS MARPAT 137:13354 GI				



AB The invention relates to a liq. cryst. medium, based on a mixt. of polar compds. with a **pos.** dielec. anisotropy. Said medium is characterized in that it contains one or more compds. of formula I (R = F, Cl, Br, I, CN, SF₅, C₁-12-alkyl; A₁, A₂ = 1,4-phenylene, trans-1,4-cyclohexylene, 1,4-cyclohexenylene, 1,4-bicyclo-(2,2,2)-octylene, piperidine-1,4-diyl, naphthalene-2,6-diyl, decahydronaphthalene-2,6-diyl, 1,2,3,4-tetrahydronaphthalene-2,6-diyl; L = F, Cl, Br, I, CN, NCS, SF₅, C₁-3-alkyl, alkoxy, alkylcarbonyl, alkylcarbonyloxy, alkoxycarbonyl, alkenyl, oxaalkenyl; Z₁, Z₂ = -CH₂O-, -OCH₂-, -CF₂O-, -CF₂-, -COO-, -OCO-, -CF₂CF₂-, -CH₂CH₂-, -(CH₂)₄-, -(CH₂)₃O-, -O(CH₂)₃-, -CF₂CH₂-, -CH:CH-, -CH:CF-, -CF:CF-, -C.tplbond.C-, single bond; X₁, X₂ = F, Cl, Br, I, CN, NCS, SF₅, C₁-5-alkyl, alkoxy, alkylcarbonyl, alkylcarbonyloxy, alkoxycarbonyl, alkenyl, oxaalkenyl; n, o = 0-2).

ST liq crystal mixt display **pos** dielec anisotropy polar compd

IT Liquid crystal displays
 (nematic liq. crystal mixt. with improved phys. properties suitable for liq. crystal display)

IT Liquid crystals
 (nematic; nematic liq. crystal mixt. with improved phys. properties)

suitable for liq. crystal display)

IT 61203-94-9 76802-59-0 76802-60-3 81711-13-9 84540-37-4
84816-56-8 86504-57-6 86504-59-8 92263-41-7 102714-93-2
106349-49-9 116020-44-1 121219-92-9 129738-34-7 131819-23-3
132123-39-8 132123-45-6 133914-49-5 133937-72-1 135734-55-3
135734-56-4 135734-59-7 135734-60-0 137489-25-9 137528-82-6
137528-84-8 137644-54-3 139215-80-8 139395-96-3 159077-74-4
160239-89-4 161712-59-0 163424-92-8 163424-93-9 163424-94-0
173837-35-9 173837-36-0 174805-87-9 175859-25-3 181943-55-5
188289-44-3 205582-37-2 205806-87-7 **279246-59-2**
279246-60-5 279246-65-0 288579-85-1 288579-86-2
326894-55-7 431987-44-9 431987-45-0 431987-46-1 431987-47-2
RL: PRP (Properties); TEM (Technical or engineered material use); USES
(Uses)
(nematic liq. crystal mixt. with improved phys. properties suitable for
liq. crystal display)

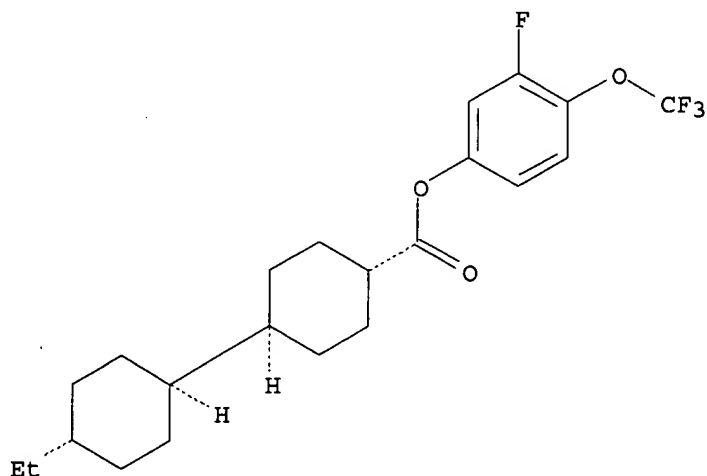
IT 85600-56-2 132123-44-5 344940-57-4
RL: TEM (Technical or engineered material use); USES (Uses)
(nematic liq. crystal mixt. with improved phys. properties suitable for
liq. crystal display)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Asahi Glass Co Ltd; JP 62181247 A 1987 CAPLUS
(2) Asahi Glass Co Ltd; JP 62195355 A 1987 CAPLUS
(3) Asahi Glass Co Ltd; JP 06263663 A 1994 CAPLUS
(4) Merck Patent Gmbh; DE 4303634 A 1994 CAPLUS
(5) Merck Patent Gmbh; DE 19520246 A 1995 CAPLUS
(6) Merck Patent Gmbh; DE 4409526 A 1995 CAPLUS

IT **279246-59-2** **279246-60-5**
RL: PRP (Properties); TEM (Technical or engineered material use); USES
(Uses)
(nematic liq. crystal mixt. with improved phys. properties suitable for
liq. crystal display)

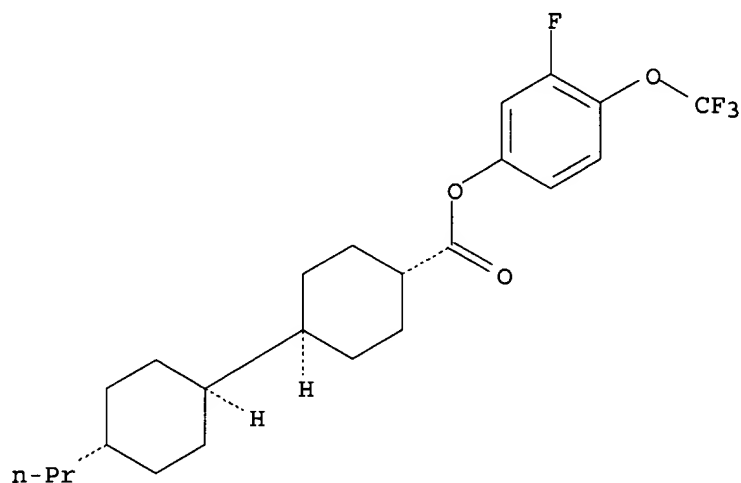
RN 279246-59-2 CAPLUS
CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-ethyl-, 3-fluoro-4-
(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 279246-60-5 CAPLUS
CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-propyl-, 3-fluoro-4-
(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L6 ANSWER 2 OF 13 CAPLUS COPYRIGHT 2002 ACS
 AN 2002:429013 CAPLUS
 DN 137:26191
 TI Electro-optical liquid crystal display and liquid crystalline medium
 IN Ichinose, Hideo; Sugiyama, Yasushi; Nakajima, Shiniji; Iijima, Masahiro;
 Heckmeier, Michael; Plach, Herbert; Schoen, Sabine
 PA Merck Patent Gmbh, Germany
 SO PCT Int. Appl., 76 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM C09K019-44
 ICS C09K019-46; C09K019-30; C09K019-42
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 Section cross-reference(s): 75

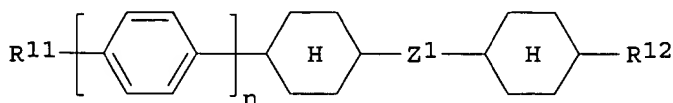
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002044304	A1	20020606	WO 2001-EP10056	20010831
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				

PRAI EP 2000-126049 A 20001129

OS MARPAT 137:26191

GI



I

AB The invention relates to an electro-optical liq. crystal display with an electrode structure for the reorientation of the liq. cryst. medium which

generates an elec. field a component parallel to the liq. crystal layer which is sufficient to affect the switching of the liq. cryst. medium. The switching of the liq. cryst. medium takes place essentially in the plane of the liq. crystal layer. The liq. cryst. medium has a **pos** . anisotropy of the dielec. permittivity contg. at least two mesogenic compds. of formula I (R11 = C1-7 alkyl, alkoxy, C2-7 alkoxyalkyl; R12 = C2-7 alkenyl, alkenyloxy; Z1 = CH2CH2, single bond; n = 0,1).

ST liq crystal display nematic mixt
 IT Liquid crystal displays
 (electro-optical liq. crystal display and liq. cryst. medium)
 IT Liquid crystals
 (nematic; electro-optical liq. crystal display and liq. cryst. medium contg.)
 IT 85600-56-2, CBC 33
 RL: TEM (Technical or engineered material use); USES (Uses)
 (CBC 33; electro-optical liq. crystal display and nematic liq. crystal mixt. contg.)
 IT 142400-92-8, CCG-V-F
 RL: TEM (Technical or engineered material use); USES (Uses)
 (CCG-V-F; electro-optical liq. crystal display and nematic liq. crystal mixt. contg.)
 IT 102714-95-4, CCH 501
 RL: TEM (Technical or engineered material use); USES (Uses)
 (CCH 501; electro-optical liq. crystal display and nematic liq. crystal mixt. contg.)
 IT 81936-32-5, PCH 301
 RL: TEM (Technical or engineered material use); USES (Uses)
 (PCH 301; electro-optical liq. crystal display and nematic liq. crystal mixt. contg.)
 IT 82991-48-8, PCH 53
 RL: TEM (Technical or engineered material use); USES (Uses)
 (PCH 53; electro-optical liq. crystal display and nematic liq. crystal mixt. contg.)
 IT 76802-59-0, PCH 7F
 RL: TEM (Technical or engineered material use); USES (Uses)
 (PCH 7F; electro-optical liq. crystal display and nematic liq. crystal mixt. contg.)
 IT 433942-38-2 433942-40-6 433942-43-9
 RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (electro-optical liq. crystal display and nematic liq. crystal mixt. contg.)
 IT 41122-70-7 52709-85-0 57125-49-2 61203-99-4, PCH-3 74240-64-5
 80944-44-1, PCH-302 82446-66-0, PCH-32 84540-37-4, BCH-32 86776-50-3
 86776-51-4 86776-52-5 92263-41-7, CCH-35 98321-58-5 116020-44-1
 116903-46-9 129738-34-7 129738-42-7 131819-23-3, CCP-3F.F.F
 132123-39-8, BCH-3F.F.F 132123-45-6 133261-31-1, CCH-3CF3
 133937-72-1, CCP-3OCF3 135734-59-7, CCP-2OCF3 **139195-59-8**
 139215-80-8, CCP-2F.F.F **142223-46-9** 155041-85-3 167306-96-9,
 PCH-3N.F.F 174079-87-9 174805-87-9, CGU-2-F 181943-55-5
 181943-56-6 181943-57-7 181943-61-3 197310-73-9 199433-38-0
 205806-87-7 208528-35-2 221526-72-3 279246-65-0 288579-85-1
 288579-86-2 326894-55-7
 RL: TEM (Technical or engineered material use); USES (Uses)
 (electro-optical liq. crystal display and nematic liq. crystal mixt. contg.)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Beyer, A; US 6045878 A 2000 CAPLUS
- (2) Klement, D; 1998 SID INTERNATIONAL SYMPOSIUM DIGEST OF TECHNICAL PAPERS, SID INTERNATIONAL SYMPOSIUM DIGEST OF TECHNICAL PAPERS 1998, V29, P393
- (3) Merck Patent Gmbh; DE 10018598 A 2000 CAPLUS
- (4) Merck Patent Gmbh; DE 19943649 A 2000 CAPLUS

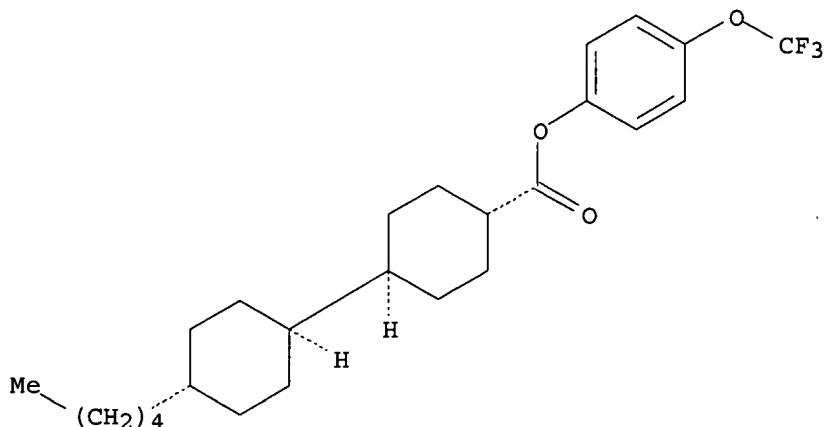
IT **139195-59-8 142223-46-9**

RL: TEM (Technical or engineered material use); USES (Uses)
(electro-optical liq. crystal display and nematic liq. crystal mixt.
contg.)

RN 139195-59-8 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-pentyl-, 4-
(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

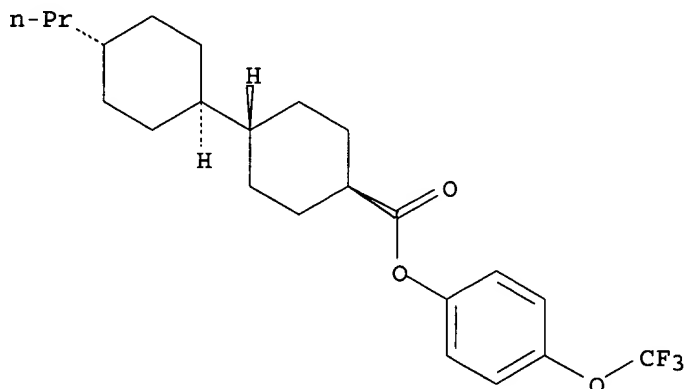
Relative stereochemistry.



RN 142223-46-9 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-propyl-, 4-
(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L6 ANSWER 3 OF 13 CAPLUS COPYRIGHT 2002 ACS

AN 2001:885274 CAPLUS

DN 136:13001

TI Nematic liquid crystal mixture suitable for active matrix liquid crystal display of vertically aligned mode

IN Heckmeier, Michael; Plach, Herbert; Ichinose, Hideo; Nakajima, Shinji; Sugiyama, Yasushi; Takashima, Akiko

PA Merck Patent G.m.b.H., Germany

SO Ger. Offen., 50 pp.

CODEN: GWXXBX

DT Patent

LA German

IC ICM C09K019-06

ICS G02F001-137; G09F009-35

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other

Reprographic Processes)
Section cross-reference(s): 75

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 10116400	A1	20011206	DE 2001-10116400	20010403
	JP 2002012867	A2	20020115	JP 2001-133288	20010427
	US 2002017634	A1	20020214	US 2001-844664	20010430
PRAI	DE 2000-10020814	A1	20000428		
OS	MARPAT 136:13001				
GI					

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The title nematic liq. crystal mixt. comprises one or more strongly dielec. pos. compd.(s) of I, II, III, and IV (R1, R2, R3 = C1-7-alkyl, alkoxy, C2-7-alkenyl, alkoxyalkyl, alkenyloxy; n1 = 0, 1; n2 = 1, 2; A3 = 1,4-trans-cyclohexylidene, 1,4-phenylidene contg. F substituent(s)). The liq. crystal display utilizing the above nematic liq. crystal mixt. shows improved contrast and lower viewing-angle dependency.

ST nematic liq crystal mixt liq crystal display; vertically aligned mode liq crystal display nematic liq crystal

IT Liquid crystal displays
(nematic liq. crystal mixt. suitable for active matrix liq. crystal display of vertically aligned mode)

IT Liquid crystals
(nematic; nematic liq. crystal mixt. suitable for active matrix liq. crystal display of vertically aligned mode)

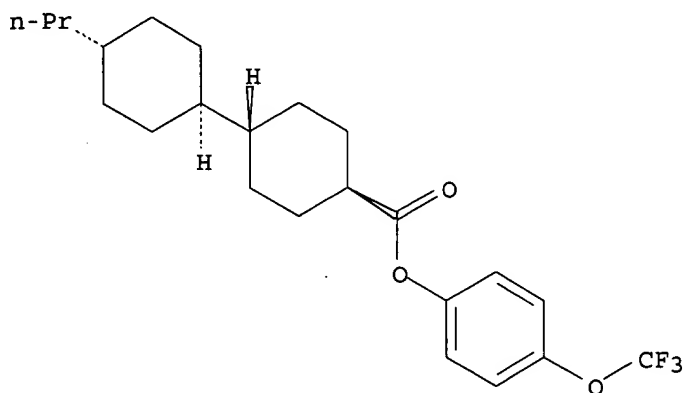
IT 65355-35-3 74240-64-5 74240-65-6 74240-66-7 76802-59-0
83242-83-5 86776-50-3 86776-51-4 86776-52-5 86786-89-2
88038-92-0 89129-90-8 92118-82-6 92118-83-7 92263-41-7
94732-93-1 95495-03-7 95672-34-7 97398-80-6 98321-58-5
102714-86-3 102714-92-1 102714-95-4 102714-96-5 115978-59-1
129738-34-7 131790-57-3 131819-23-3 132123-39-8 133058-92-1
133058-94-3 133058-95-4 133914-49-5 133937-72-1 135734-59-7
137644-54-3 139215-80-8 139215-88-6 139395-96-3 **142223-46-9**
142400-92-8 155041-85-3 167306-96-9 173837-35-9 173837-36-0
174805-87-9 182116-18-3 182191-13-5 182191-18-0 182191-30-6
182191-32-8 182191-36-2 188289-44-3 193089-48-4
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(nematic liq. crystal mixt. suitable for vertically aligned mode active matrix liq. crystal display showing improved contrast and lower viewing-angle dependency)

IT **142223-46-9**
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(nematic liq. crystal mixt. suitable for vertically aligned mode active matrix liq. crystal display showing improved contrast and lower viewing-angle dependency)

RN 142223-46-9 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-propyl-, 4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

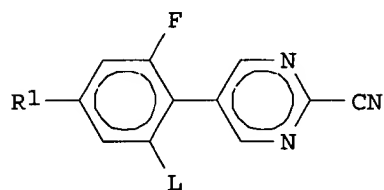
Relative stereochemistry.



L6 ANSWER 4 OF 13 CAPLUS COPYRIGHT 2002 ACS
 AN 2001:747073 CAPLUS
 DN 135:296286
 TI IPS (In-Plane-Switching) type electrooptical liq. crystal display with reorientation layer
 IN Heckmeier, Michael; Bremer, Matthias; Goetz, Achim; Schuler, Brigitte
 PA Merck Patent GmbH, Germany
 SO Ger. Offen., 36 pp.
 CODEN: GWXXBX
 DT Patent
 LA German
 IC ICM C09K019-34
 ICS C09K019-42; G02F001-137; G09F009-35
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 75

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 10111142	A1	20011011	DE 2001-10111142	20010308
	JP 2002012869	A2	20020115	JP 2001-108671	20010406
	US 2002031619	A1	20020314	US 2001-827342	20010406
PRAI	DE 2000-10017385	A1	20000407		
OS	MARPAT 135:296286				
GI					



I

AB The invention relates to a liq. crystal display which has a reorientation layer to reorient liq. crystal mixts. having pos. dielec. anisotropy, wherein the liq. crystal mixt. includes at least one mesogen compd. represented by a general formula I (R1 = C1-7-alkyl, alkoxy, C2-7-alkenyl, alkenyloxy, alkoxyalkyl; L = H, F). The liq. crystal mixt. suitable for the IPS (in-plane-switching) liq. crystal display shows relatively high clear point, and low rotational viscosity.
 ST liq crystal display IPS nematic liq crystal mixt
 IT Liquid crystal displays
 (IPS (In-Plane-Switching) type electrooptical liq. crystal display with

reorientation layer)

IT Liquid crystals
(nematic; IPS (In-Plane-Switching) type electrooptical liq. crystal display with reorientation layer)

IT 142400-92-8, CCG-V-F
RL: TEM (Technical or engineered material use); USES (Uses)
(CCG-V-F; in nematic liq. crystal mixt. suitable for IPS (In-Plane-Switching) type electrooptical liq. crystal display with reorientation layer)

IT 221526-72-3, PPTUI 3-2
RL: TEM (Technical or engineered material use); USES (Uses)
(PPTUI 3-2; in nematic liq. crystal mixt. suitable for IPS (In-Plane-Switching) type electrooptical liq. crystal display with reorientation layer)

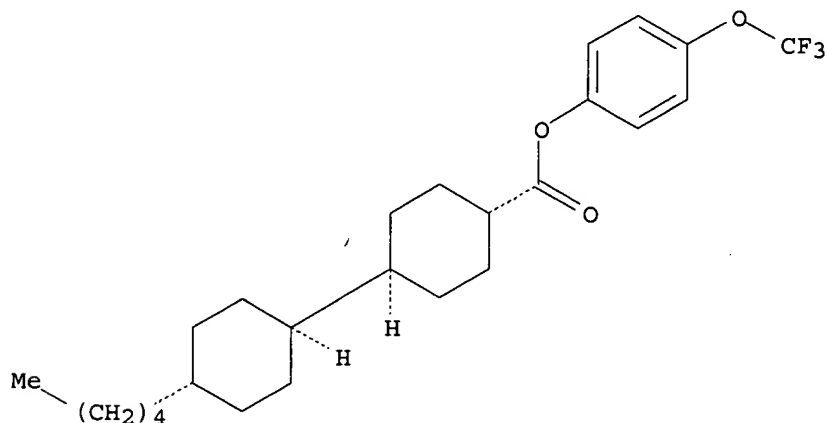
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74240-65-6 74240-66-7 76802-59-0 76802-61-4 79832-84-1
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84540-37-4 85312-59-0 85600-56-2 86776-51-4 86776-52-5
86776-54-7 86786-89-2 89129-90-8 90937-40-9 92118-83-7
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115785-13-2 115978-59-1 116020-40-7 116020-44-1 118144-66-4
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133058-95-4 133914-49-5 133914-50-8 133937-72-1 134412-17-2
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139215-80-8 **142223-46-9** 159119-17-2 167306-96-9
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184161-88-4 205582-37-2 279246-65-0 288579-85-1
288579-86-2 357952-07-9 364634-73-1 364634-75-3 364634-78-6
364634-79-7 364634-80-0 364634-81-1
RL: TEM (Technical or engineered material use); USES (Uses)
(in nematic liq. crystal mixt. suitable for IPS (In-Plane-Switching) type electrooptical liq. crystal display with reorientation layer)

IT **139195-59-8 142223-46-9 184161-88-4**
RL: TEM (Technical or engineered material use); USES (Uses)
(in nematic liq. crystal mixt. suitable for IPS (In-Plane-Switching) type electrooptical liq. crystal display with reorientation layer)

RN 139195-59-8 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-pentyl-, 4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

Relative stereochemistry.

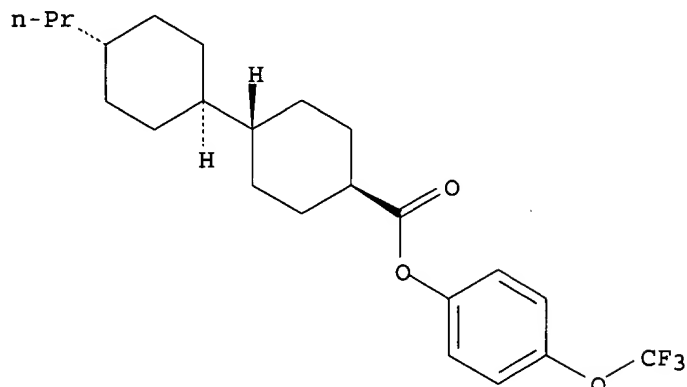


RN 142223-46-9 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-propyl-, 4-

(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

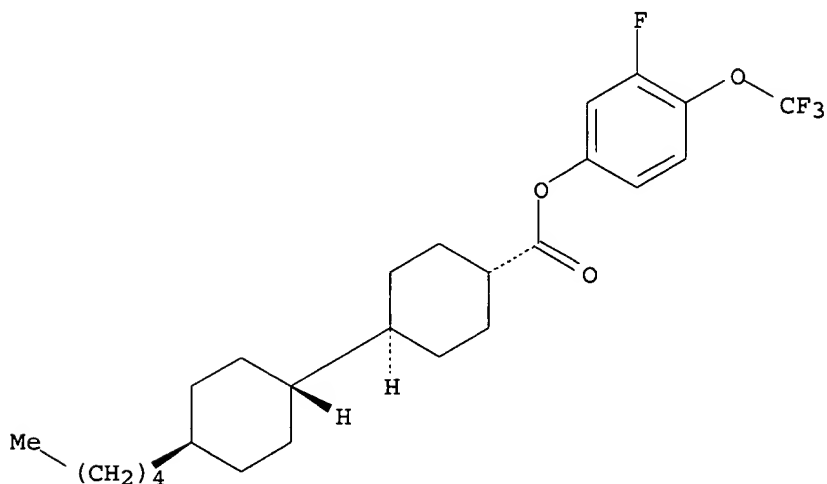
Relative stereochemistry.



RN 184161-88-4 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-pentyl-, 3-fluoro-4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L6 ANSWER 5 OF 13 CAPLUS COPYRIGHT 2002 ACS

AN 2001:747072 CAPLUS

DN 135:296285

TI IPS (In-Plane-Switching) type electrooptical liquid crystal display with reorientation layer

IN Heckmeier, Michael; Reuter, Marcus; Bremer, Matthias; Poetsch, Eike

PA Merck Patent GmbH, Germany

SO Ger. Offen., 26 pp.

CODEN: GWXXBX

DT Patent

LA German

IC ICM C09K019-06

ICS G02F001-137; G09F009-35

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 75

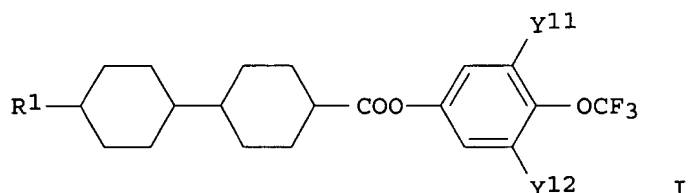
FAN.CNT 1

PATENT NO.

KIND DATE

APPLICATION NO. DATE

PI	DE 10111139	A1	20011011	DE 2001-10111139	20010308
	US 2002043645	A1	20020418	US 2001-819799	20010329
	JP 2002012866	A2	20020115	JP 2001-108549	20010406
PRAI	DE 2000-10017384	A1	20000407		
OS	MARPAT 135:296285				
GI					



AB The invention relates to a liq. crystal display which has a reorientation layer to reorient liq. crystal mixts. having pos. dielec. anisotropy, wherein the liq. crystal mixt. includes at least one compd. represented by a general formula I (R1 = C1-7-alkyl, alkoxy, C2-7-alkenyl, alkenyloxy, alkoxyalkyl; Y11, Y12 = H, F). The liq. crystal mixt. suitable for the IPS (in-plane-switching) liq. crystal display shows relatively high clear point, and low rotational viscosity.

ST liq crystal display IPS nematic liq crystal mixt

IT Liquid crystal displays

(IPS (In-Plane-Switching) type electrooptical liq. crystal display with reorientation layer)

IT Liquid crystals

(nematic; IPS (In-Plane-Switching) type electrooptical liq. crystal display with reorientation layer)

IT 74240-65-6 86776-50-3 96624-52-1 97398-80-6 102714-95-4
 129738-34-7 131819-23-3 132123-39-8 132123-45-6 135734-59-7
 135734-60-0 137644-54-3 139215-80-8 140911-33-7 159119-17-2
 167306-96-9 173837-35-9 173837-36-0 174805-87-9 175859-25-3
 178689-87-7 181943-55-5 181943-61-3 **184161-88-4**
 202116-87-8 **279246-59-2** **279246-60-5** 279246-65-0
364359-29-5

RL: TEM (Technical or engineered material use); USES (Uses)
 (in nematic liq. crystal mixt. suitable for IPS (In-Plane-Switching)
 type electrooptical liq. crystal display with reorientation layer)

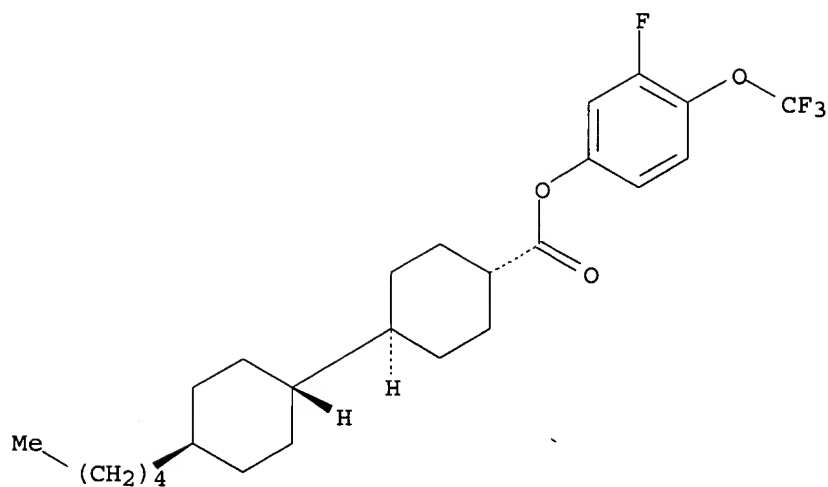
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364359-29-5

RL: TEM (Technical or engineered material use); USES (Uses)
 (in nematic liq. crystal mixt. suitable for IPS (In-Plane-Switching)
 type electrooptical liq. crystal display with reorientation layer)

RN 184161-88-4 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-pentyl-, 3-fluoro-4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

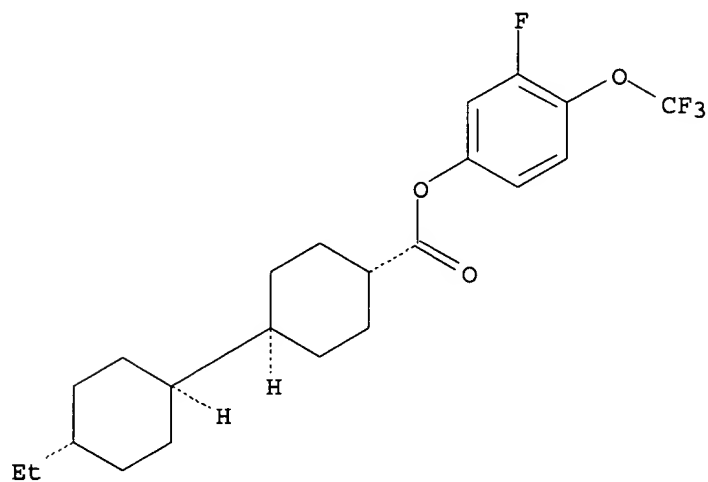
Relative stereochemistry.



RN 279246-59-2 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-ethyl-, 3-fluoro-4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

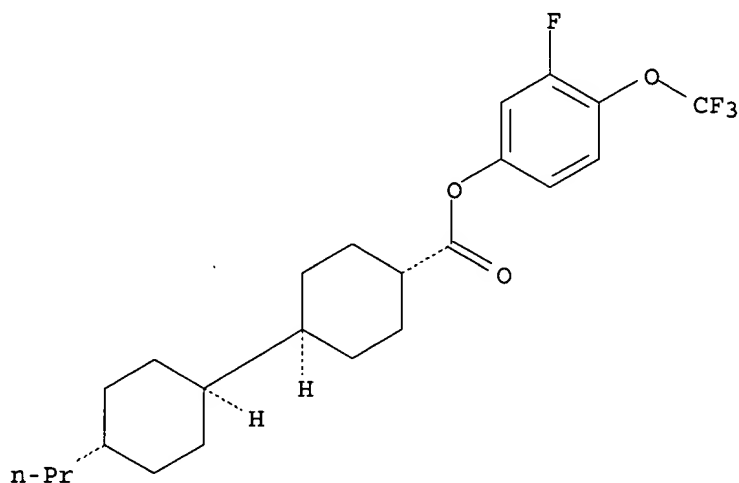
Relative stereochemistry.



RN 279246-60-5 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-propyl-, 3-fluoro-4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

Relative stereochemistry.

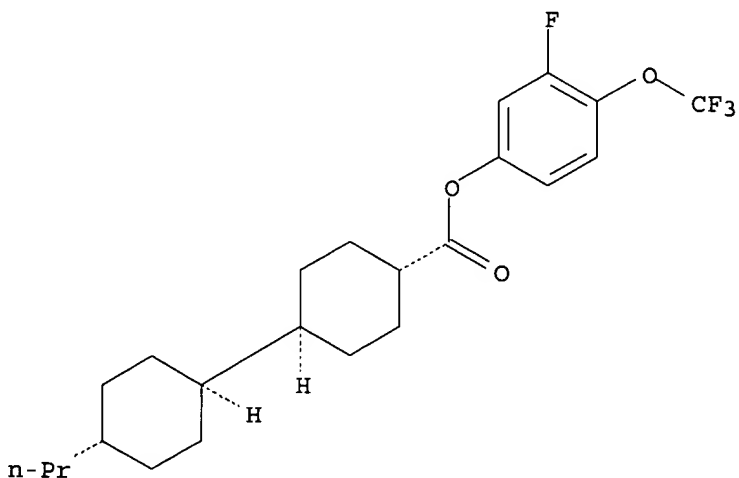


RN 364359-29-5 CAPLUS
 CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-ethyl-, 3-fluoro-4-(trifluoromethoxy)phenyl ester, (trans,trans)-, mixt. with 5-[(trans,trans)-4'-ethyl[1,1'-bicyclohexyl]-4-yl]-1,2,3-trifluorobenzene, 4-(trans-4-ethylcyclohexyl)-2,3',4',5'-tetrafluoro-1,1'-biphenyl, 1-fluoro-4-(trans-4-heptylcyclohexyl)benzene, (trans,trans)-3-fluoro-4-(trifluoromethoxy)phenyl 4'-propyl[1,1'-bicyclohexyl]-4-carboxylate, 1-[(trans,trans)-4'-propyl[1,1'-bicyclohexyl]-4-yl]-4-(trifluoromethoxy)benzene, 3,4,5-trifluoro-4'-(trans-4-pentylcyclohexyl)-1,1'-biphenyl, 1,2,3-trifluoro-5-[(trans,trans)-4'-propyl[1,1'-bicyclohexyl]-4-yl]benzene and 3,4,5-trifluoro-4'-(trans-4-propylcyclohexyl)-1,1'-biphenyl (9CI) (CA INDEX NAME)

CM 1

CRN 279246-60-5
 CMF C23 H30 F4 O3

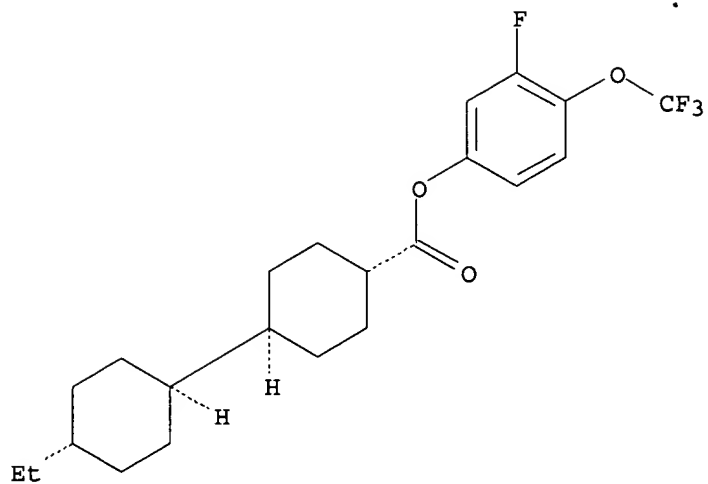
Relative stereochemistry.



CM 2

CRN 279246-59-2
 CMF C22 H28 F4 O3

Relative stereochemistry.



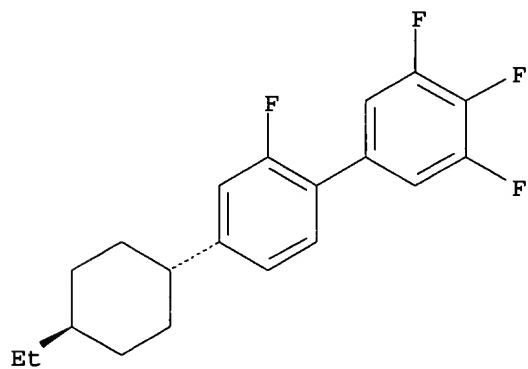
CM 3

CRN 174805-87-9

CMF C20 H20 F4

CDES 2:TRANS

Relative stereochemistry.



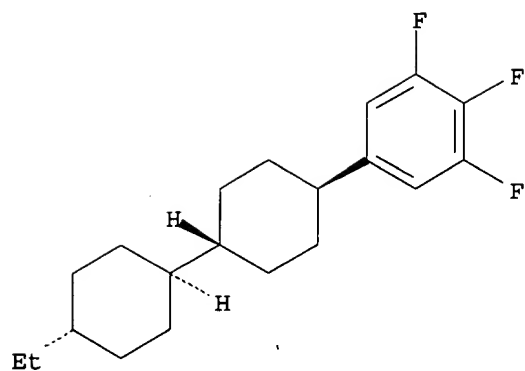
CM 4

CRN 139215-80-8

CMF C20 H27 F3

CDES *

Relative stereochemistry.



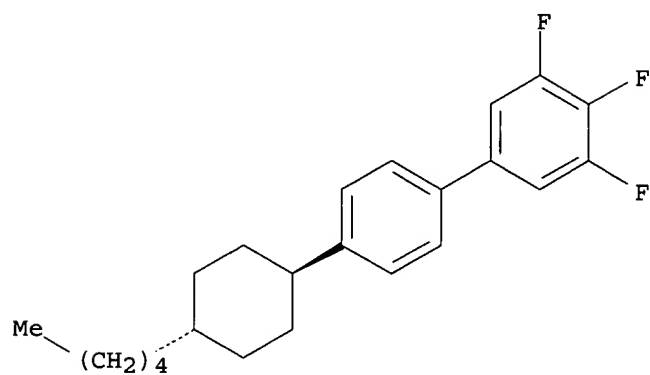
CM 5

CRN 137019-95-5

CMF C23 H27 F3

CDES 2:TRANS

Relative stereochemistry.



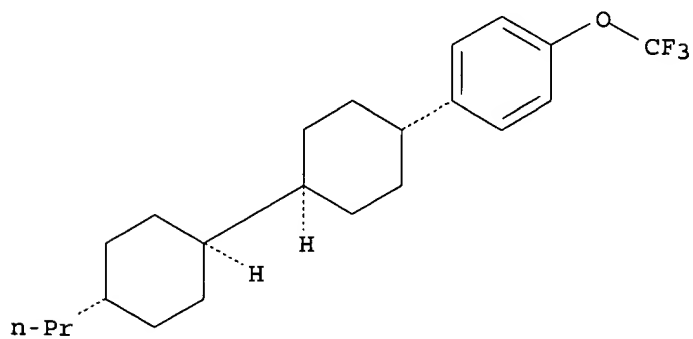
CM 6

CRN 133937-72-1

CMF C22 H31 F3 O

CDES *

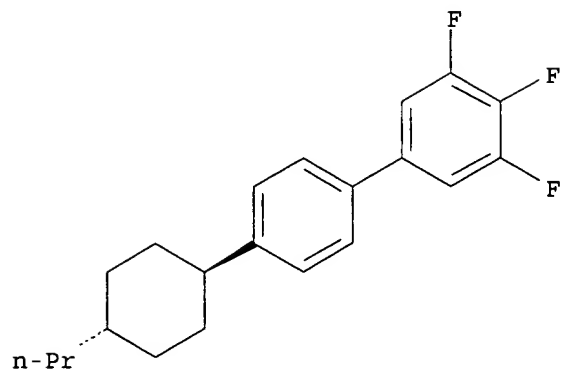
Relative stereochemistry.



CM 7

CRN 132123-39-8
CMF C21 H23 F3
CDES 2:TRANS

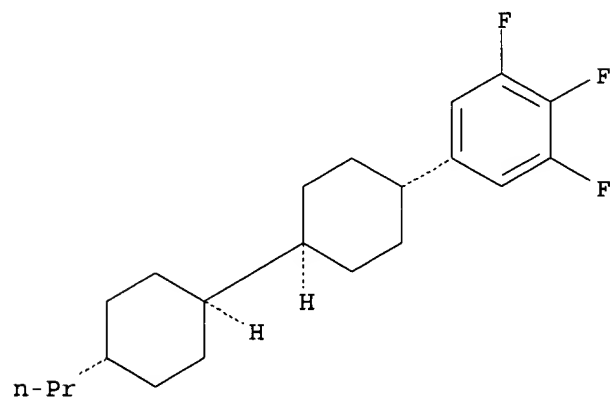
Relative stereochemistry.



CM 8

CRN 131819-23-3
CMF C21 H29 F3
CDES *

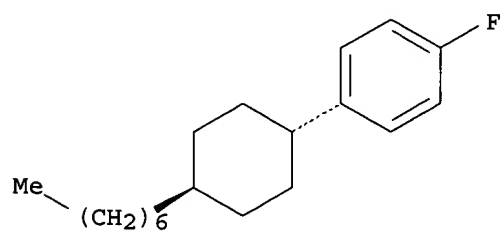
Relative stereochemistry.

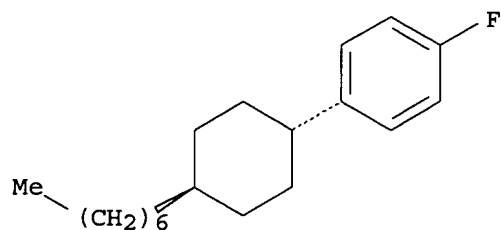


CM 9

CRN 76802-59-0
CMF C19 H29 F
CDES 2:TRANS

Relative stereochemistry.

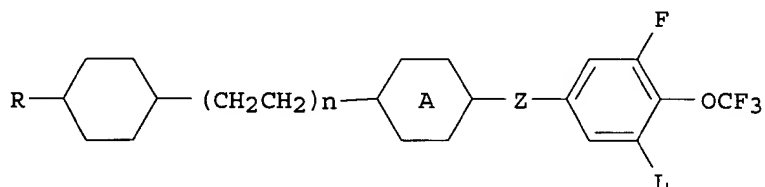




L6 ANSWER 6 OF 13 CAPLUS COPYRIGHT 2002 ACS
 AN 2000:574076 CAPLUS
 DN 133:157767
 TI Liquid crystalline medium for liquid crystal display
 IN Heckmeier, Michael; Schuler, Brigitte; Reuter, Marcus; Poetsch, Eike; Meyer, Volker
 PA Merck Patent G.m.b.H., Germany
 SO Ger. Offen., 34 pp.
 CODEN: GWXXBX
 DT Patent
 LA German
 IC ICM C09K019-08
 ICS G02F001-137; G09F009-35
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 75

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 10004636	A1	20000817	DE 2000-10004636	20000203
PRAI	DE 1999-19906387	A1	19990216		
OS	MARPAT 133:157767				
GI					



AB The title liq. cryst. medium is based on the mixt. of pos. dielec. anisotropic polar compds., wherein the medium contains .gtoreq.1 compd.(s) represented by general formula I (R = H, C1-15-alkyl, alkenyl; L = H, F; A = trans-1,4-cyclohexylene; Z = COO, CH₂CH₂, CH₂O, OCF₂, CF₂O, OCH₂, (CH₂)₄, single bond; n = 1, 2). The liq. cryst. medium shows good chem. and thermal resistances.
 ST nematic liq. cryst. medium liq. crystal display
 IT Liquid crystal displays
 (nematic liq. cryst. medium for liq. crystal display)
 IT Liquid crystals
 (nematic; nematic liq. cryst. medium for liq. crystal display)
 IT 74240-64-5 76802-61-4 84540-37-4 84816-56-8 85312-59-0
 86776-50-3 96624-52-1 97398-80-6 102714-93-2 102714-95-4
 106349-49-9 129738-34-7 131819-23-3 132123-39-8 132123-45-6
 133261-31-1 133914-49-5 133937-72-1 134412-18-3 135734-59-7
 135734-60-0 137019-95-5 137644-54-3 137784-79-3 139215-80-8
 139215-82-0 139215-88-6 139215-89-7 139420-31-8 140911-33-7
 159119-17-2 167306-96-9 173837-35-9 173837-36-0 174805-87-9

175859-25-3 178689-87-7 181943-55-5 **184161-88-4**
205582-37-2 **279246-59-2** **279246-60-5** 279246-65-0
287493-79-2

RL: TEM (Technical or engineered material use); USES (Uses)
(in nematic liq. cryst. medium for liq. crystal display)

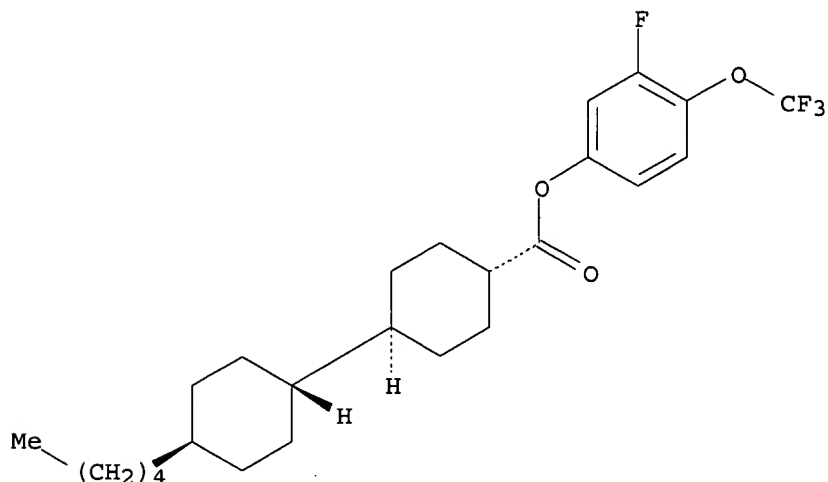
IT **184161-88-4** **279246-59-2** **279246-60-5**

RL: TEM (Technical or engineered material use); USES (Uses)
(in nematic liq. cryst. medium for liq. crystal display)

RN 184161-88-4 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-pentyl-, 3-fluoro-4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

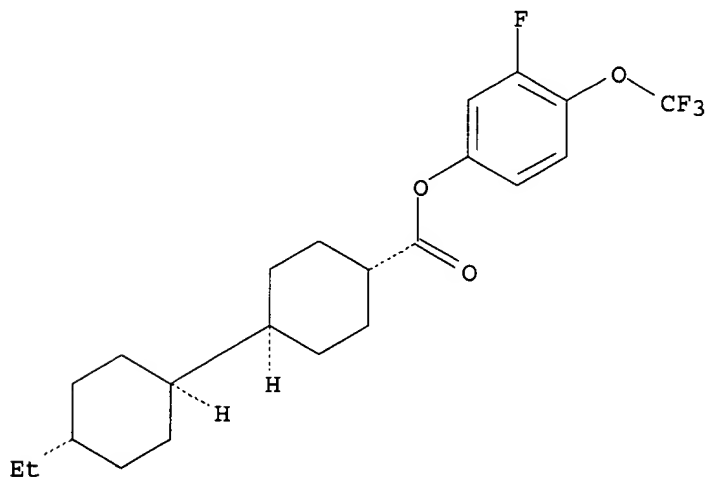
Relative stereochemistry.



RN 279246-59-2 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-ethyl-, 3-fluoro-4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

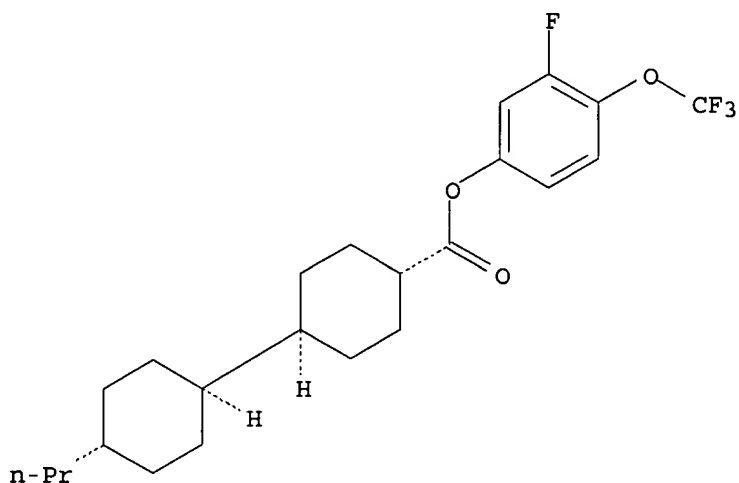
Relative stereochemistry.



RN 279246-60-5 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-propyl-, 3-fluoro-4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

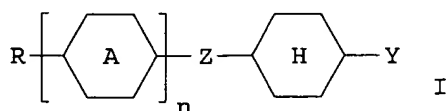
Relative stereochemistry.



L6 ANSWER 7 OF 13 CAPLUS COPYRIGHT 2002 ACS
 AN 2000:441891 CAPLUS
 DN 133:81646
 TI Liquid crystal medium for liquid crystal display
 IN Heckmeier, Michael; Schuler, Brigitte; Tarumi, Kazuaki; Kirsch, Peer;
 Reiffenrath, Volker
 PA Merck Patent G.m.b.H., Germany
 SO PCT Int. Appl., 81 pp.
 CODEN: PIXXD2
 DT Patent
 LA German
 IC ICM C09K019-30
 ICS C09K019-34; C09K019-42
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 Section cross-reference(s): 75

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000037586	A1	20000629	WO 1999-EP9919	19991214
	W:	AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
	DE 19859421	A1	20000629	DE 1998-19859421	19981222
	EP 1144548	A1	20011017	EP 1999-968797	19991214
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI			
PRAI	DE 1998-19859421	A	19981222		
	WO 1999-EP9919	W	19991214		
OS	MARPAT 133:81646				
GI					



AB The invention relates to a liq. crystal medium based on a mixt. of polar compds. having pos. dielec. anisotropy, wherein the medium contains one or more compds. of general formula I (R = H, C1-15-alkyl, alkenyl; A = trans-1,4-cyclohexylene, cyclohexenylene; Y = halogenated C.1toreq.6-alkyl, halogenated C.1toreq.6-alkenyl, halogenated C.1toreq.6-alkoxy, halogenated C.1toreq.6-alkenyloxy; Z = -CH2O-, -OCH2-, -CH2CH2-, -CH:CH-, -CF2O-, -OCF2-, -C2F4-, single bond; n = 1, 2).

ST nematic liq crystal mixt liq crystal display

IT Liquid crystal displays

Liquid crystals

(nematic liq. crystal mixt. suitable for matrix liq. crystal display)

IT 73255-62-6 76802-59-0 83242-83-5 87941-91-1 88038-92-0
 89129-90-8 95756-62-0 96624-52-1 97398-80-6 98321-58-5
 102714-86-3 102714-92-1 102714-95-4 115978-59-1 129738-34-7
 131819-23-3 132123-45-6 133261-29-7 133261-31-1 135734-59-7
 135734-60-0 137644-54-3 137810-19-6 139215-80-8 139395-96-3
 139395-98-5 139420-31-8 140714-02-9 140911-33-7 163002-74-2
 163002-75-3 163035-73-2 175859-25-3 180337-50-2 181943-55-5
 181943-56-6 181943-57-7 181943-58-8 183272-43-7 **184161-88-4**
 279246-55-8 279246-56-9 279246-57-0 279246-58-1 **279246-59-2**
279246-60-5 279246-61-6 279246-62-7 279246-63-8
 279246-64-9 279246-65-0 279246-66-1 279246-67-2 279246-68-3
 279246-69-4 279246-70-7 279246-71-8

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(in nematic liq. crystal mixt. suitable for matrix liq. crystal display)

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Merck Patent; DE 19707154 A 1997 CAPLUS
- (2) Merck Patent G M B H; WO 9012073 A 1990 CAPLUS
- (3) Merck Patent G M B H; DE 4023107 A 1992 CAPLUS
- (4) Merck Patent G M B H; WO 9202597 A 1992 CAPLUS
- (5) Merck Patent Gesellschaft Mit Beschraenkter Haftung Germany; WO 9206148 A 1992 CAPLUS
- (6) Merck Patent Gmbh; WO 9119772 A 1991 CAPLUS
- (7) Merck Patent Gmbh; DE 4123389 A 1993 CAPLUS
- (8) Merck Patent Gmbh; DE 4308028 A 1994 CAPLUS

IT **184161-88-4 279246-59-2 279246-60-5**

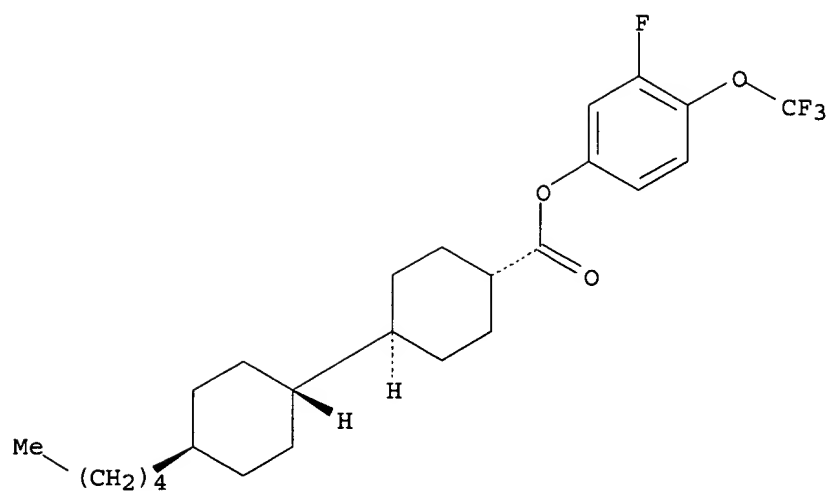
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(in nematic liq. crystal mixt. suitable for matrix liq. crystal display)

RN 184161-88-4 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-pentyl-, 3-fluoro-4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

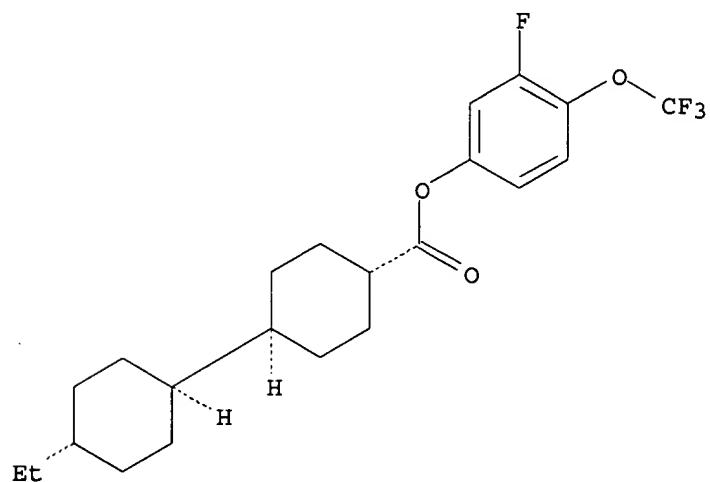
Relative stereochemistry.



RN 279246-59-2 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-ethyl-, 3-fluoro-4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

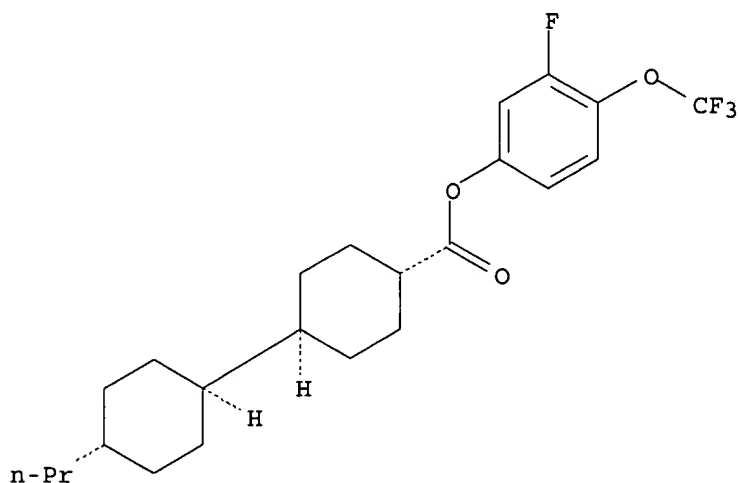
Relative stereochemistry.



RN 279246-60-5 CAPLUS

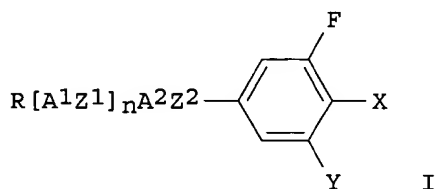
CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-propyl-, 3-fluoro-4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L6 ANSWER 8 OF 13 CAPLUS COPYRIGHT 2002 ACS
 AN 1996:732757 CAPLUS
 DN 126:111119
 TI Liquid-crystal display device
 IN Plach, Herbert; Rieger, Bernhard; Reiffenrath, Volker; Poetsch, Eike
 PA Merck Patent Gesellschaft Mit Beschränkter Haftung, Germany
 SO U.S., 15 pp.
 CODEN: USXXAM
 DT Patent
 LA English
 IC ICM C09K019-52
 ICS G02F001-13
 NCL 252299010
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5578241	A	19961126	US 1993-63093	19930518
OS	MARPAT 126:111119				
GI					



AB The invention relates to a liq.-crystal display device which contains an
 elec. switchable, dielec. **pos.** twisted nematic liq. crystal
 layer between two substrates which together with a frame form a cell, the
 liq. crystal layer consisting of a liq. crystal mixt. being essentially
 based on the compds. represented by formula I (R = C.ltoeq.12 alkyl
 wherein one or two nonadjacent CH2 groups may be replaced by O, CO, CO2,
 OCO, or CH=CH; Z1, Z2 = a single bond, CH2CH2, CO2, OCO, CH2, OCH2, or
 C.tplbond.C; A1, A2 = trans-1,4-cyclohexylene, 1,4-phenylene,
 2-fluoro-1,4-phenylene, 2-fluoro-1,4-phenylene, 3-fluoro-1,4-phenylene,
 2,3-difluoro-1,4-phenylene, or 3,5-difluoro-1,4-phenylene, one of A1 and
 A2 may be pyrimidine-2,5-diyl, pyridine-2,5-diyl, or trans-1,3-dioxane-2,5-

diyl; P = F, Cl, or NCS; Q = a single bond or (O)mCsH2s-pFp; Y = H, F, or Cl; m = 0 or 1; s = 1, 2, 3, or 4; p = an integer of 0-25; n = 0, 1, or 2), and two electrode layers with alignment layers thereon being applied to the substrates, the alignment layers being based on fluorinated polyimides.

ST liq crystal display fluorobenzene deriv

IT Polyimides, uses

RL: TEM (Technical or engineered material use); USES (Uses)
(fluorinated; alignment layers for liq.-crystal display devices)

IT Liquid crystal displays

(fluorobenzene deriv. liq. crystal compns. and fluorinated polyimide alignment layers for)

IT 76802-59-0 76802-61-4 81711-13-9 85312-59-0 97398-80-6
97941-21-4 98321-58-5 102714-95-4 107215-66-7 107215-67-8
116020-40-7 133914-49-5 133937-72-1 134412-17-2 135734-59-7
135734-60-0 137489-25-9 137784-79-3 **139195-59-8**
139215-89-7 **142223-46-9** 145305-22-2

RL: TEM (Technical or engineered material use); USES (Uses)
(electrooptical display devices using liq. crystal compns. contg.)

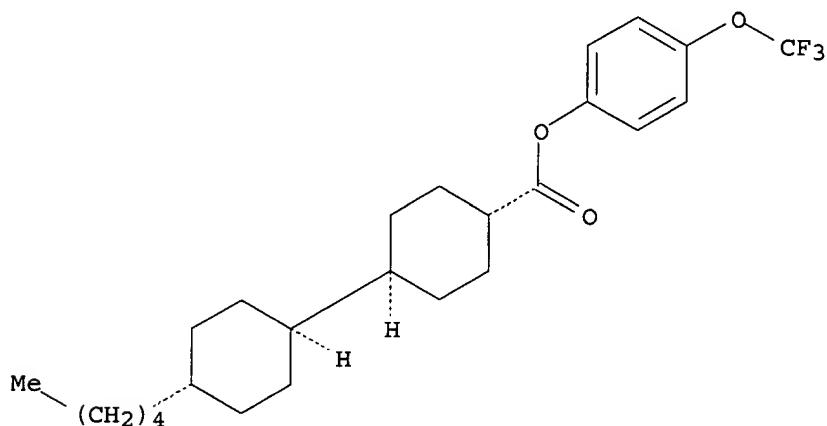
IT **139195-59-8 142223-46-9**

RL: TEM (Technical or engineered material use); USES (Uses)
(electrooptical display devices using liq. crystal compns. contg.)

RN 139195-59-8 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-pentyl-, 4-
(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

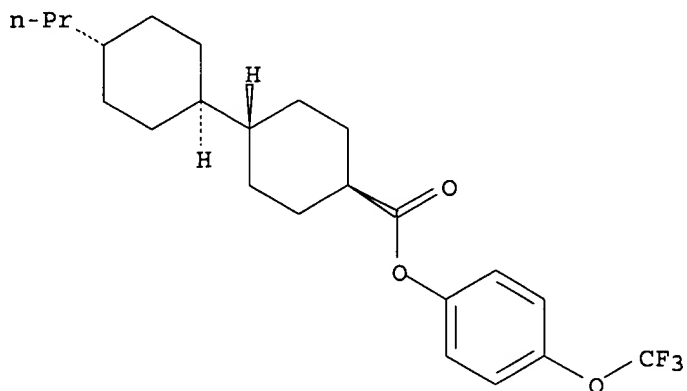
Relative stereochemistry.



RN 142223-46-9 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-propyl-, 4-
(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

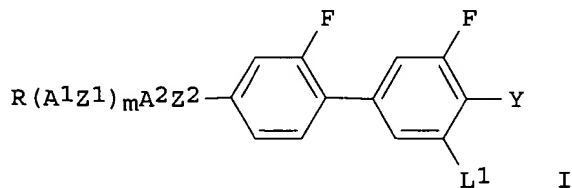
Relative stereochemistry.



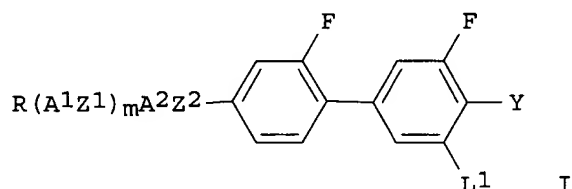
L6 ANSWER 9 OF 13 CAPLUS COPYRIGHT 2002 ACS
 AN 1996:191013 CAPLUS
 DN 124:246577
 TI Benzene derivative and liquid crystal medium for electro optical devices
 IN Tarumi, Kazuaki; Bartmann, Ekkehard; Reiffenrath, Volker; Schoen, Sabine;
 Pauluth Detlef; Schuler, Brigitte; Poetsch, Eike
 PA Merck Patent Gmbh, Germany
 SO Ger. Offen., 56 pp.
 CODEN: GWXXBX
 DT Patent
 LA German
 IC ICM C07C043-225
 ICS C07C025-18; C07C025-24; C07C015-14; C09K019-08; G09F009-35
 ICA C09K019-30; C09K019-12; C09K019-14
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 Section cross-reference(s): 25, 75

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19528085	A1	19960208	DE 1995-19528085	19950731
	WO 9605159	A1	19960222	WO 1995-EP3045	19950731
	W: JP, KR, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 775101	A1	19970528	EP 1995-928502	19950731
	EP 775101	B1	20000503		
	R: CH, DE, FR, GB, IT, LI, NL				
	JP 10504032	T2	19980414	JP 1996-506972	19950731
	TW 424107	B	20010301	TW 1995-84108761	19950822
	US 6159393	A	20001212	US 1997-776759	19970421
PRAI	DE 1994-4427932	A1	19940806		
	DE 1994-4429280	A1	19940819		
	DE 1995-19501730	A1	19950120		
	WO 1995-EP3045	W	19950731		
OS	MARPAT 124:246577				
GI					



I



AB The title medium with pos. dielec. anisotropy contains .gtoreq.1 compds. selected from I [R = H, (CN-, CF3-, or halo-substituted) C1-15 alkyl or alkenyl residual in which .gtoreq.1 CH2 groups may be substituted with O, S, 1,3-cyclobutylene, CO, COO, OCO, OCOO; A1, A2 = 1,4-cyclohexenylene residual, trans-1,4-cyclohexylene residual in which .gtoreq.1 CH2 groups may be replaced with O and/or S; Z1, Z2 = COO, OCO, CH2O, OCH2, CH2CH2, CH:CH, C.tplbond.C; Y = F, Cl, (halo-) C1-6 alkyl, alkenyl, alkoxy; m = 0, 1]. Similar compds. and their mixts. are also claimed.

ST benzene deriv liq crystal medium

IT Liquid crystals

(benzene deriv. and liq. crystal medium for electro optical devices)

IT Optical imaging devices

(electrooptical liq.-crystal, benzene deriv. and liq. crystal medium for electro optical devices)

IT	76802-59-0	76802-61-4	80944-44-1	81711-13-9	81936-32-5
	84816-56-8	85312-59-0	88038-92-0	92263-41-7	96624-52-1
	97398-80-6	97941-21-4	98321-58-5	102714-93-2	102714-95-4
	106349-49-9	107215-66-7	107215-67-8	115978-59-1	116020-40-7
	121219-85-0	131739-11-2	131739-14-5	131819-23-3	133914-49-5
	133914-50-8	133937-72-1	134412-17-2	134412-18-3	135734-59-7
	135734-60-0	137489-25-9	137644-54-3	137784-79-3	137810-19-6
	139195-59-8	139215-80-8	139215-88-6	139215-89-7	
	139395-96-3	139395-98-5	142223-46-9	145305-22-2	
	159077-74-4	173837-35-9	173837-36-0	174806-91-8	174806-92-9
	174806-93-0	174806-94-1	174806-95-2	174806-96-3	174806-97-4
	174830-64-9	174830-65-0	174830-66-1	174830-67-2	174830-68-3
	174954-64-4				

RL: DEV (Device component use); USES (Uses)

(liq. crystal compn. for liq. crystal display)

IT	139677-37-5P	157754-80-8P	163035-69-6P	163035-70-9P	163424-53-1P
	163424-54-2P	163424-55-3P	163424-56-4P	163424-57-5P	163424-59-7P
	163424-60-0P	167764-86-5P	167764-87-6P	167764-92-3P	167764-93-4P
	167764-94-5P	173160-80-0P	173837-35-9P	173837-36-0P	174805-84-6P
	174805-85-7P	174805-86-8P	174805-87-9P	174805-88-0P	174805-89-1P
	174805-90-4P	174805-91-5P	174805-92-6P	174805-93-7P	174805-94-8P
	174805-95-9P	174805-96-0P	174805-97-1P	174805-98-2P	174805-99-3P
	174806-00-9P	174806-01-0P	174806-02-1P	174806-03-2P	174806-04-3P
	174806-05-4P	174806-06-5P	174806-07-6P	174806-08-7P	174806-09-8P
	174806-10-1P	174806-11-2P	174806-12-3P	174806-13-4P	174806-14-5P
	174806-15-6P	174806-16-7P	174806-17-8P	174806-18-9P	174806-19-0P
	174806-20-3P	174806-21-4P	174806-22-5P	174806-23-6P	174806-24-7P
	174806-25-8P	174806-26-9P	174806-27-0P	174806-28-1P	174806-29-2P
	174806-30-5P	174806-31-6P	174806-32-7P	174806-33-8P	174806-34-9P
	174806-35-0P	174806-36-1P	174806-37-2P	174806-38-3P	174806-39-4P
	174806-40-7P	174806-41-8P	174806-42-9P	174806-43-0P	174806-44-1P
	174806-45-2P	174806-46-3P	174806-47-4P	174806-48-5P	174806-49-6P
	174806-50-9P	174806-51-0P	174806-52-1P	174806-53-2P	174806-54-3P
	174806-55-4P	174806-56-5P	174806-57-6P	174806-58-7P	174806-59-8P
	174806-60-1P	174806-61-2P	174806-62-3P	174806-63-4P	174806-64-5P
	174806-65-6P	174806-66-7P	174806-67-8P	174806-68-9P	174806-69-0P
	174806-70-3P	174806-71-4P	174806-72-5P	174806-73-6P	174806-74-7P
	174806-75-8P	174806-76-9P	174806-77-0P	174806-78-1P	174806-79-2P
	174806-80-5P	174806-81-6P	174806-82-7P	174806-83-8P	174806-84-9P

174806-85-0P 174806-86-1P 174806-87-2P 174806-88-3P 174806-89-4P
174806-90-7P

RL: PNU (Preparation, unclassified); PREP (Preparation)
(prepn. of liq. crystal medium)

IT 145767-77-7P 154868-20-9P, Phenol, 4-bromo-2-fluoro-, sodium salt
163006-96-0P 163035-66-3P 163424-58-6P 174805-83-5P
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation)
(prepn. of liq. crystal medium)

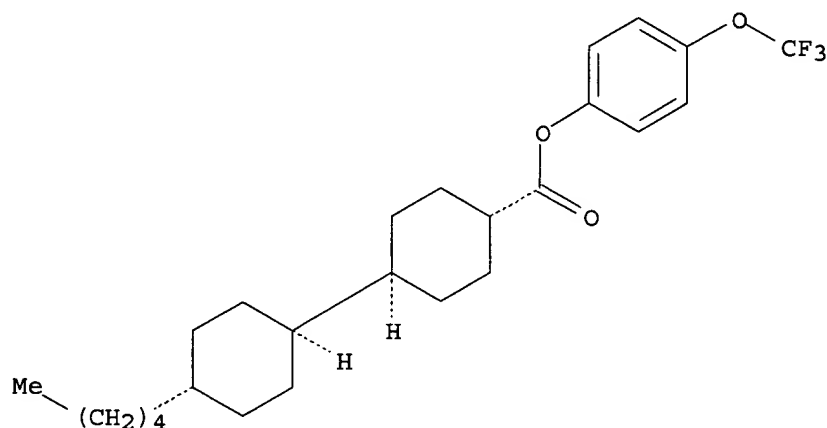
IT 348-61-8, 3,4-Difluorobromobenzene 359-07-9 2105-94-4,
4-Bromo-2-fluorophenol 3831-49-0, 1,2,2,2-Tetrafluoro-1-iodoethane
25236-64-0, 2,2,2-Trifluoroethylmethylsulfonate 105529-58-6
138679-81-9 154868-19-6, Phenol, 4-bromo-2,6-difluoro-, sodium salt
159119-10-5
RL: RCT (Reactant)
(prepn. of liq. crystal medium)

IT 139195-59-8 142223-46-9
RL: DEV (Device component use); USES (Uses)
(liq. crystal compn. for liq. crystal display)

RN 139195-59-8 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-pentyl-, 4-
(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

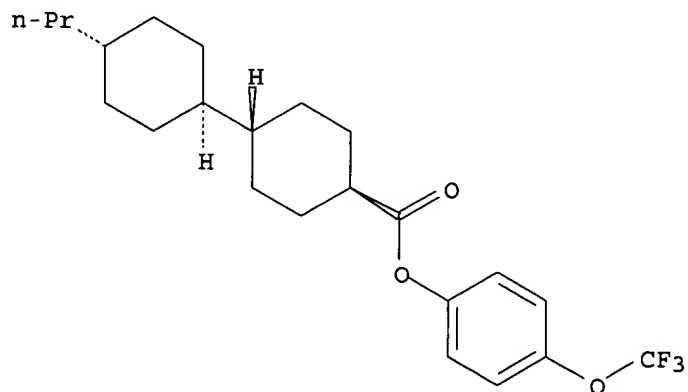
Relative stereochemistry.



RN 142223-46-9 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-propyl-, 4-
(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

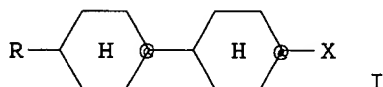
Relative stereochemistry.



L6 ANSWER 10 OF 13 CAPLUS COPYRIGHT 2002 ACS
 AN 1993:460504 CAPLUS
 DN 119:60504
 TI Liquid crystal media, their use for electrooptical applications, and electrooptical displays employing the media
 IN Rieger, Bernhard; Plach, Herbert; Sawada, Atsushi
 PA Merck Patent G.m.b.H., Germany
 SO Ger. Offen., 18 pp.
 CODEN: GWXXBX
 DT Patent
 LA German
 IC ICM C09K019-08
 ICS G02F001-13; G09F009-35
 ICA C09K019-30; C09K019-12; C09K019-14; C07C043-115; C07C043-12; C07C043-184; C07C043-225; C07C022-04; C07C025-18
 CC 75-11 (Crystallography and Liquid Crystals)
 Section cross-reference(s): 24

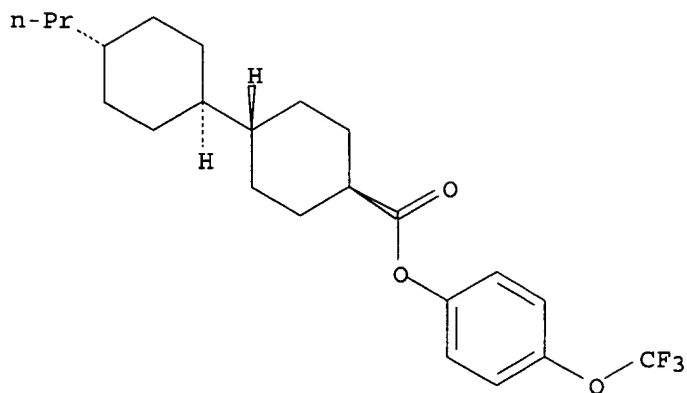
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 4123389	A1	19930121	DE 1991-4123389	19910715
	WO 9302152	A1	19930204	WO 1992-EP1531	19920707
	W: JP				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, MC, NL, SE				
	EP 548318	A1	19930630	EP 1992-914727	19920707
	EP 548318	B1	19980617		
	R: DE, GB				
PRAI	DE 1991-4123389		19910715		
	WO 1992-EP1531		19920707		
OS	MARPAT 119:60504				
GI					



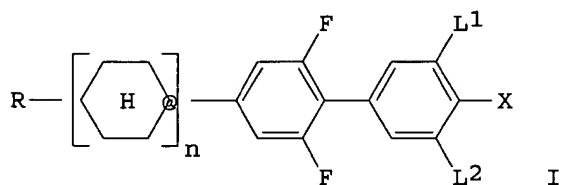
AB The title media comprise mixts. of polar compds. with pos. dielec. anisotropies including .gtoreq.1 compds. described by the general formula I (X = a C.ltoreq.7 alkoxy, oxaalkyl, or dioxalkyl group; and R = a C.ltoreq.7 alkyl, oxaalkyl, fluoroalkyl, or alkenyl group).
 ST display liq crystal medium cyclohexylcyclohexane deriv
 IT Liquid crystals
 (cyclohexyl cyclohexane derivs.)
 IT Optical imaging devices
 (electrooptical liq.-crystal, using cyclohexyl cyclohexane deriv.-contg. media)
 IT 76802-61-4 97398-80-6 98321-58-5 102714-95-4, CCH-501 107215-66-7
 107215-67-8 133914-49-5 133937-72-1 135734-59-7 135734-60-0
 137489-22-6 137784-79-3 139215-89-7 139396-00-2 **142223-46-9**
 RL: PRP (Properties)
 (liq. crystal media contg.)
 IT **142223-46-9**
 RL: PRP (Properties)
 (liq. crystal media contg.)
 RN 142223-46-9 CAPLUS
 CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-propyl-, 4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L6 ANSWER 11 OF 13 CAPLUS COPYRIGHT 2002 ACS
 AN 1993:245224 CAPLUS
 DN 118:245224
 TI Liquid crystal media, their use for electrooptical applications, and
 electrooptical displays employing them
 PA Merck Patent G.m.b.H., Germany
 SO Ger. Offen., 31 pp.
 CODEN: GWXXBX
 DT Patent
 LA German
 IC ICM C09K019-08
 ICS G02F001-13; G09F009-35
 ICA C09K019-30; C09K019-12; C09K019-14; C07C025-18; C07C022-08; C07C025-24;
 C07C043-225; C07C043-174; C07C255-50
 CC 75-11 (Crystallography and Liquid Crystals)
 Section cross-reference(s): 25
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 4123539	A1	19930121	DE 1991-4123539	19910716
	WO 9302153	A1	19930204	WO 1992-EP1541	19920708
	W: JP, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, MC, NL, SE				
	EP 548323	A1	19930630	EP 1992-914912	19920708
	EP 548323	B1	19960515		
	R: DE, GB				
	JP 06501520	T2	19940217	JP 1993-502550	19920708
	US 5520846	A	19960528	US 1994-300879	19940906
PRAI	DE 1991-4123539		19910716		
	WO 1992-EP1541		19920708		
	US 1992-930529		19920930		
OS	MARPAT 118:245224				
GI					



AB The title media comprise a mixt. of polar compds. with pos.
 dielec. anisotropies including .gtoreq.1 compds. described by the general

formula I (L1 = H or F; L2 = H or F; R = a C.1toreq.7 alkyl, oxaalkyl, fluoroalkyl, or alkenyl group; X = H, F, Cl, CF3, OCF3, or OCHF2; and n = 1 or 2).

ST display liq crystal biphenyl deriv

IT Liquid crystals

(biphenyl derivs.)

IT Optical imaging devices

(electrooptical liq.-crystal, using biphenyl deriv.-contg. media)

IT 76802-59-0 76802-61-4 80944-44-1 81711-13-9 81936-32-5
 84816-56-8 85312-59-0 85600-56-2 97564-42-6 97941-21-4
 98321-58-5 102714-93-2 102714-95-4 106349-49-9 107215-66-7
 107215-67-8 116020-40-7 133914-49-5 133937-72-1 134412-17-2
 135734-59-7 135734-60-0 137489-19-1 137489-25-9 137489-27-1
 137784-79-3 139195-59-8 139195-65-6 139215-69-3
 139215-70-6 139215-89-7 139215-91-1 141072-20-0 142223-46-9
 145305-22-2 145305-23-3 147292-56-6

RL: PRP (Properties)

(liq. crystal media contg.)

IT 131819-23-3 137019-95-5 137644-54-3 145305-24-4 147575-94-8

RL: PRP (Properties)

(liq. crystal medium)

IT 139215-92-2

RL: PRP (Properties)

(uliq. crystal medium)

IT 139195-59-8 139195-65-6 142223-46-9

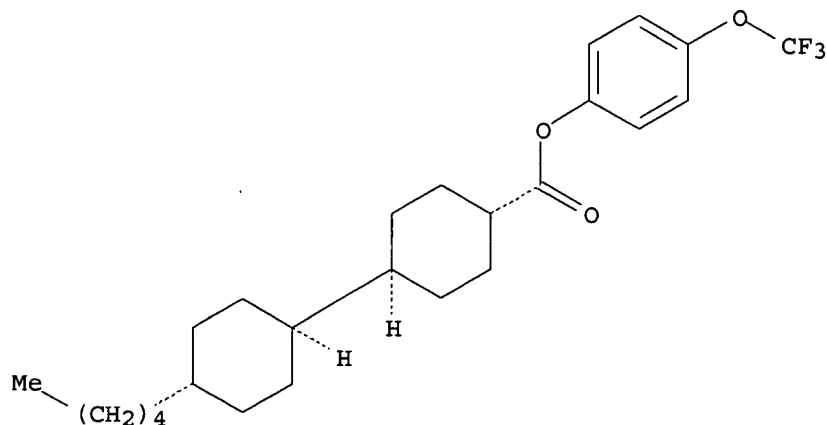
RL: PRP (Properties)

(liq. crystal media contg.)

RN 139195-59-8 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-pentyl-, 4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

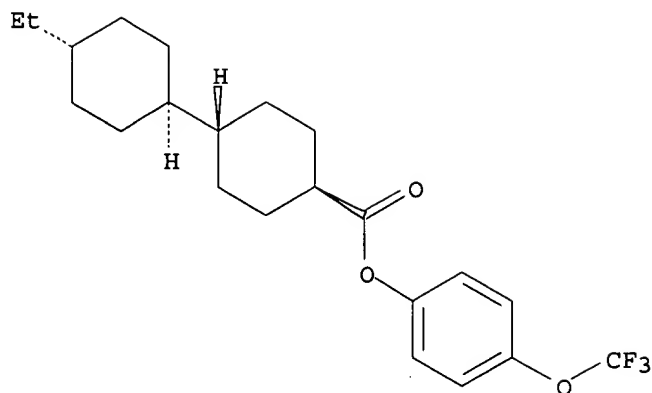
Relative stereochemistry.



RN 139195-65-6 CAPLUS

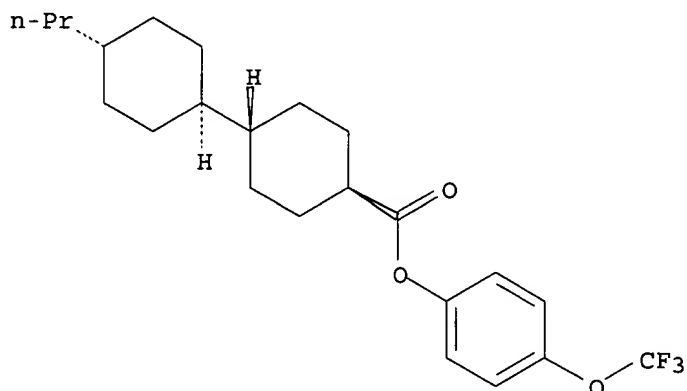
CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-ethyl-, 4-(trifluoromethoxy)phenyl ester, [trans(trans)]- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 142223-46-9 CAPLUS
 CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-propyl-, 4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L6 ANSWER 12 OF 13 CAPLUS COPYRIGHT 2002 ACS
 AN 1992:521724 CAPLUS
 DN 117:121724
 TI Liquid-crystal media and electrooptical display devices containing them
 IN Rieger, Bernhard; Yoshitake, Hiroki; Jacob, Thomas; Plach, Herbert; Finkenzeller, Ulrich; Kurmeier, Hans Adolf
 PA Merck Patent Gesellschaft mit Beschraenkter Haftung, Germany
 SO PCT Int. Appl., 69 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM C09K019-30
 ICS C09K019-20
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 75

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9206148	A1	19920416	WO 1991-EP1785	19910919
	W: JP, KR, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
	EP 503021	A1	19920916	EP 1991-916090	19910919
	EP 503021	B1	19960612		
	R: DE, GB				

	JP 05501895	T2	19930408	JP 1991-514912	19910919
	US 5397505	A	19950314	US 1994-182303	19940118
PRAI	EP 1990-118881		19901002		
	EP 1991-102214		19910216		
	EP 1991-108842		19910529		
	WO 1991-EP1785		19910919		
	US 1991-776223		19911113		
OS	MARPAT 117:121724				
GI					

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The media contain .gtoreq.1 compd. of the general formula I and .gtoreq.1 compd. of formulas II, III, and IV, where r = 0 or 1; Q1 = CH2CH2 or single bond; A = 1,4-phenylene or trans-1,4-cyclohexylene; L = H or F; R = C1-7 alkyl, alkoxy, oxaalkyl, fluoroalkyl, or alkenyl; X = F, CF3, OCF3, or OCHF2; X6 = F, Cl, CF3, OCF3, or OCHF2; and Y1,Y2 = H or F.

ST liq crystal medium electrooptical display

IT Liquid crystals
(mixts., contg. polar compds. having pos. dielec. anisotropy)

IT Optical imaging devices
(electro-, liq.-crystal, mixts. for, contg. polar compds. having pos. dielec. anisotropy)

IT 142292-18-0
RL: MSC (Miscellaneous)
(liq. crystal, for electrooptical display devices)

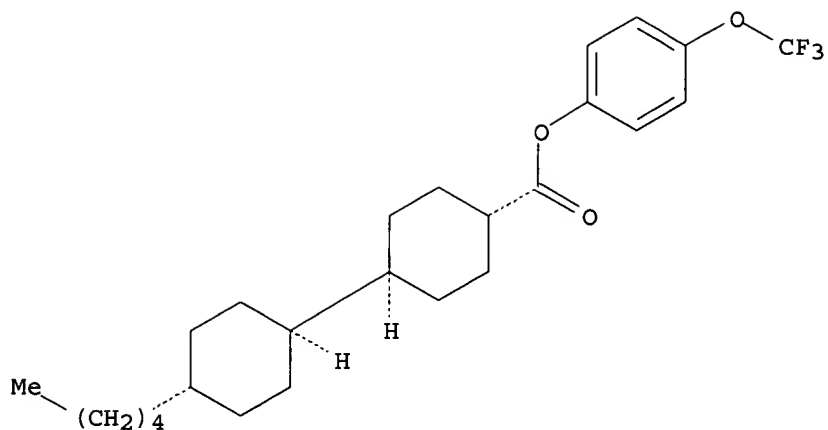
IT 61203-99-4 61204-00-0 61204-01-1 76802-59-0 76802-61-4
79709-84-5 79832-84-1 80944-44-1 81701-13-5 81711-13-9
83242-83-5 84078-44-4 85312-59-0 88878-50-6 97398-80-6
97564-42-6 97941-21-4 98321-58-5 102714-92-1 102714-95-4
107215-66-7 107215-67-8 118144-66-4 118144-67-5 121219-85-0
130746-75-7 130746-77-9 130746-79-1 132123-39-8 133914-49-5
133914-50-8 133919-70-7 133937-72-1 134412-17-2 135734-59-7
136176-75-5 136176-77-7 136176-78-8 137019-95-5 137043-18-6
139191-32-5 139195-59-8 139195-65-6
142223-46-9 142223-47-0 142223-48-1 142223-49-2
142223-50-5 142245-55-4
RL: USES (Uses)
(liq.-crystal media contg., for electrooptical display devices)

IT 139195-59-8 139195-65-6 142223-46-9
142223-50-5
RL: USES (Uses)
(liq.-crystal media contg., for electrooptical display devices)

RN 139195-59-8 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-pentyl-, 4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

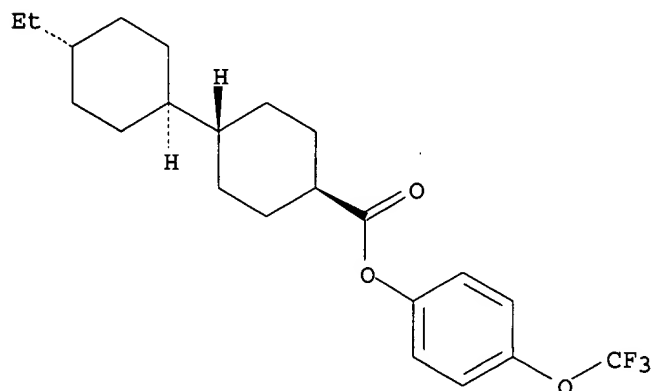
Relative stereochemistry.



RN 139195-65-6 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-ethyl-, 4-(trifluoromethoxy)phenyl ester, [trans(trans)]- (9CI) (CA INDEX NAME)

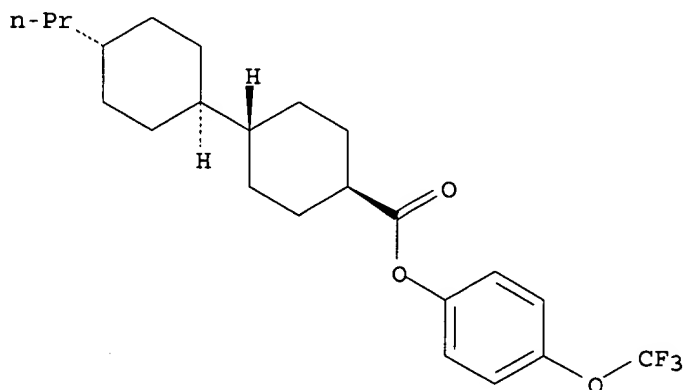
Relative stereochemistry.



RN 142223-46-9 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-propyl-, 4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

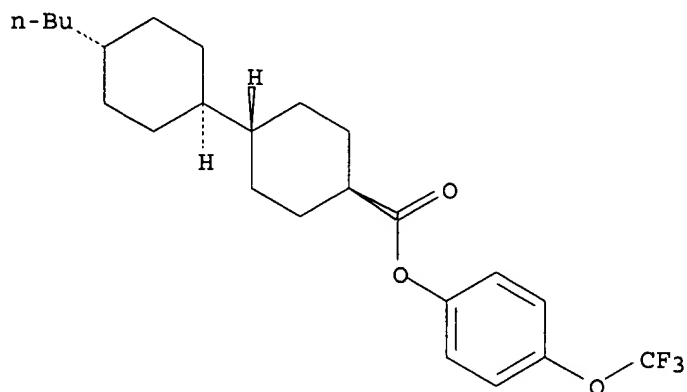
Relative stereochemistry.



RN 142223-50-5 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-butyl-, 4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L6 ANSWER 13 OF 13 CAPLUS COPYRIGHT 2002 ACS
 AN 1992:117438 CAPLUS
 DN 116:117438
 TI Liquid-crystal medium and display devices containing it
 IN Rieger, Bernhard; Hittich, Reinhard; Reiffenrath, Volker; Plach, Herbert
 PA Merck Patent G.m.b.H., Germany
 SO Ger. Offen., 48 pp.
 CODEN: GWXXBX

DT Patent

LA German

IC ICM C09K019-06

ICS G02F001-13; G09F009-35

ICA C09K019-30; C09K019-12; C09K019-14; C09K019-20; C09K019-34; C07C025-18;
 C07C043-192; C07C043-225; C07D319-06; C07D239-26; C07D213-24

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)

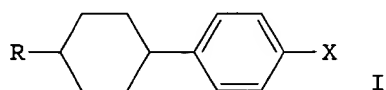
Section cross-reference(s): 75

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 4111824	A1	19911017	DE 1991-4111824	19910411
	WO 9116400	A1	19911031	WO 1991-EP696	19910412
	W: JP, KR, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
	EP 477330	A1	19920401	EP 1991-907411	19910412
	EP 477330	B1	19970312		
	R: DE, FR, GB, IT, NL				
	JP 05500682	T2	19930212	JP 1991-506880	19910412
	JP 2000080367	A2	20000321	JP 1999-280251	19910412
	US 5350535	A	19940927	US 1991-688522	19910610
	JP 2000080371	A2	20000321	JP 1999-280252	19990930
	JP 3263685	B2	20020304		
PRAI	DE 1990-4012013	A1	19900413		
	DE 1991-4106529	A1	19910301		
	JP 1991-506880	A3	19910412		
	WO 1991-EP696	W	19910412		

OS MARPAT 116:117438

GI



AB The medium is based on a mixt. of polar compds. with pos. dielec. anisotropy, .gtoreq.1 of which has the formula I, where X = F, Cl, OCF₃, or OCHF₂ and R = C1-7 alkyl, oxaalkyl, fluoroalkyl, or alkenyl.

ST liq crystal medium display device; phenylcyclohexane deriv liq crystal medium; cyclohexylbenzene deriv liq crystal medium

IT Liquid crystals
(mixts., contg. phenylcyclohexane derivs.)

IT Optical imaging devices
(electro-, liq.-crystal, mixts. for, contg. phenylcyclohexane derivs.)

IT

61203-99-4	61204-00-0	61204-01-1	63221-88-5	72928-54-2
76802-59-0	76802-61-4	79832-84-1	80944-44-1	80955-71-1
81711-13-9	81936-32-5	82832-27-7	82832-29-9	82832-32-4
82832-34-6	82832-57-3	82832-58-4	83171-54-4	84016-65-9
84656-69-9	84816-56-8	85312-59-0	85600-56-2	86579-52-4
86778-48-5	88038-92-0	92343-70-9	95495-00-4	95495-01-5
95495-03-7	95495-07-1	95495-09-3	95756-62-0	96143-16-7
97398-80-6	97941-21-4	102714-93-2	106174-38-3	106349-49-9
107215-66-7	107215-67-8	107215-73-6	107215-74-7	114291-12-2
115978-59-1	116020-36-1	116020-40-7	116903-46-9	116903-47-0
116903-48-1	116903-49-2	117923-19-0	117923-20-3	117923-21-4
117943-37-0	118164-50-4	118164-51-5	119990-81-7	119990-82-8
121219-85-0	121219-93-0	121553-94-4	122060-83-7	122060-84-8
127727-79-1	130746-61-1	130746-64-4	131819-23-3	132123-39-8
133914-49-5	133914-50-8	133937-72-1	134141-91-6	134316-60-2
134316-67-9	134316-70-4	134316-72-6	134335-58-3	134412-17-2
134412-18-3	135734-58-6	135734-59-7	135734-60-0	135734-61-1
136609-96-6	136639-95-7	136861-93-3	136922-40-2	137019-95-5
137489-19-1	137529-52-3	137529-61-4	137529-62-5	137529-63-6
137529-75-0	137554-94-0	137644-54-3	137784-79-3	137784-88-4
138679-92-2	139195-58-7	139195-59-8	139195-60-1	
139195-61-2	139195-62-3	139195-63-4	139195-64-5	139195-65-6
139195-66-7	139195-67-8	139195-68-9	139195-69-0	139195-70-3
139215-66-0	139215-67-1	139215-68-2	139215-69-3	139215-70-6
139215-71-7	139215-72-8	139215-73-9	139215-74-0	139215-75-1
139215-76-2	139215-77-3	139215-78-4	139215-79-5	139215-80-8
139215-81-9	139215-82-0	139215-83-1	139215-84-2	139215-85-3
139215-86-4	139215-87-5	139215-88-6	139215-89-7	139215-90-0
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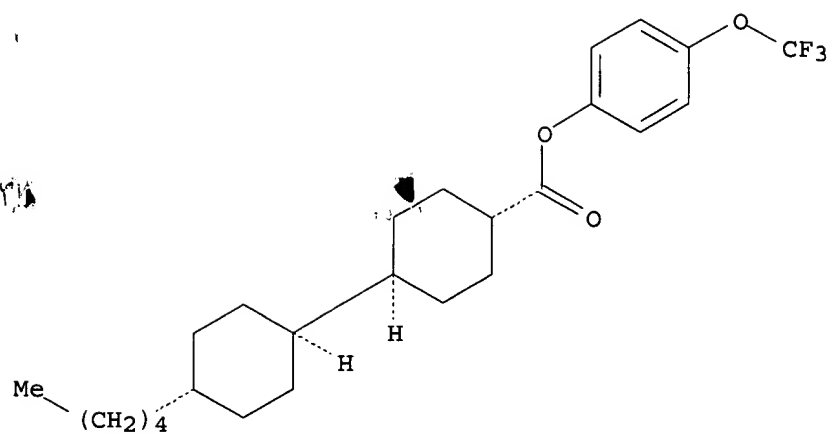
RL: TEM (Technical or engineered material use); USES (Uses)
(liq.-crystal mixts. contg., for display devices)

IT 139195-59-8 139195-65-6
RL: TEM (Technical or engineered material use); USES (Uses)
(liq.-crystal mixts. contg., for display devices)

RN 139195-59-8 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-pentyl-, 4-(trifluoromethoxy)phenyl ester, (trans,trans)- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 139195-65-6 CAPLUS

CN [1,1'-Bicyclohexyl]-4-carboxylic acid, 4'-ethyl-, 4-(trifluoromethoxy)phenyl ester, [trans(trans)]- (9CI) (CA INDEX NAME)

Relative stereochemistry.

